

THE EXPERIENCES OF INSTRUCTIONAL DESIGNERS
OF WEB-BASED LEARNING AT THE
POST-SECONDARY LEVEL

CENTRE FOR NEWFOUNDLAND STUDIES

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TRACEY POWELL



**THE EXPERIENCES OF INSTRUCTIONAL DESIGNERS
OF WEB-BASED LEARNING AT THE POST-SECONDARY LEVEL**

by

© Tracey Powell

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Abstract

The purpose of this study was to gain insight into the experiences of instructional designers at the post-secondary level who are designing for Web-based learning (WBL). Five separate case studies were considered from the perspectives of work environment, roles and responsibilities, successes and challenges and the designers' reflections on their experiences. The composite of the designer of WBL that emerged from the experiences is one who operates as part of a team and collaborates with others during the course development process. The designer of WBL is also an agent of change, fueling the adoption of Web-based technologies, policies and processes by his/her development unit. He or she is also a specialist and expert in the areas of Web-based technologies, instructional design processes, learning theories, adult learning principles, and online teaching and learning practices. The designer of WBL is also a researcher who seeks new knowledge in these areas and may also be a trainer, instructor, and/or consultant in sharing this knowledge with others. The designer of WBL is also a course developer and may even be a curriculum and program developer and/or course and program evaluator. Implications highlight the importance of access to opportunities to learn and for support.

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Dedication

I would like to dedicate this piece of work to my two children, Alex and Jessica.

Understand to achieve anything requires faith and belief in yourself, vision, hard work, determination, and dedication. Remember all things are possible for those who believe.

Anne Frank

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Chapter 1: Introduction

Introduction

Within the last decade, Web-based learning (WBL) has emerged and is also growing exponentially as a new form of learning. Instructional designers play an important role in the design and development of this new form of learning at the post-secondary level. Whereas the instructional design profession has existed since the 1940s, designers today are encountering new experiences as a result of the growth in WBL. However, we do not have extensive knowledge of the experiences of these instructional designers with WBL as this is a relatively new phenomenon. Yet this knowledge is important because the success of WBL will be partially dependent on the effectiveness of the work of instructional designers.

The purpose of this study is to gain insight into the experiences of instructional designers at the post-secondary level who are designing for WBL. Their experiences are considered from the perspectives of work environment, roles and responsibilities, successes and challenges and the designers' reflections on their experiences. Five case studies were conducted for five instructional designers respectively. These designers work in four publicly funded post-secondary institutions in the province of Newfoundland and Labrador, Canada. They are all involved in designing Web-based courses. Gaining insight into their experiences will be useful in understanding the profession as it is now, newly adapting to emergent experiences of working in a virtual environment. Ultimately the results of this study can also provide insights that will promote the success of WBL in general.

Statement of the Problem

E-learning has grown, and continues to grow, at an exponential rate in Canada, the U.S. and worldwide with a projection that "the worldwide corporate e-learning market will exceed USD23 billion by 2004" (NUA Internet Surveys, 2001, p. 1). Similarly, The International Data Corporation projected a growth in Canada's e-learning industry from \$145M in 2000 to more than \$880M in 2004 (Industry Canada, 2001). In the United States in 1999, 28% of all courses were delivered using the Web. In Canada, estimates for the same period varied between 21% and 45% (Cuneo et al., 2000).

This growth in WBL is also evident at the post-secondary level. For example, Athabasca University, Canada's largest post-secondary distance education institution, reported enrolment increases of about 80% over the past four years (Athabasca University: School Info., 2003). Likewise, in Newfoundland and Labrador, Memorial University's Web-based course offerings have grown exponentially over the last decade. In 1994, Memorial offered its first Web-based course and in 2003, nearly ten years later, Memorial was delivering over 175 courses using Web-based technologies and offering Web-based undergraduate degrees in Business, Technology, Maritime Studies, Nursing (Post RN) and Social Work (Vaughan, 2003).

The growth in WBL has given rise to an increase in the need to design WBL environments and experiences. In post-secondary institutions, instructional designers work with content experts and others (programmers, graphic artists, video producers, copyright specialists) to design and develop such environments and experiences. As Liu et al. (2002)

noted, “The need for developing new digital materials or converting them from the traditional media calls for instructional designers as an essential part of the development team” (p. 196). Whereas WBL is a relatively new phenomenon, as Prestera (2001) observed, instructional designers have been designing instructional materials since the 1940s. Prestera observed further, however, that the practice of instructional design underwent radical change in the 1990s due to the onset of human-performance technology, knowledge management, constructivism and WBL.

Current literature supports this new and emergent role of the instructional designer in the design and development of WBL. For example, Liu et al. (2002) noted that “the rapid changes in the field of technology are redefining the process of developing technology-enhanced educational materials as well as the roles of developers involved in the process” (p. 195). They also noted that “like the technology [which] a designer learns to manipulate, the requirements of an instructional designer are also evolving to encompass new possibilities, both tangible and theoretical” (p. 197). Di Corpo (2001) spoke of these new experiences as focusing “on the motivational and developmental aspects, rather than the arguably more traditional and mechanical instructional design model” (¶ 6). Zielinski (2000) also acknowledged these new experiences, noting “instructional designers now need to know how to design for many more media alternatives” (p. 32).

When designing for WBL, McLoughlin and McCartney (2000) noted that instructional designers need to challenge the traditional instructional design model whereby learning was fragmented into steps; they must go beyond prescribed sequences and isolated

learning episodes to make the learner the centre of instruction, thereby creating constructivist learning environments. Designing and developing instructional materials for online delivery requires a unique skills set. Morris and Hinrichs (as cited in Conceição-Runlee & Daley, 1998) suggested that “designing Web-based environments for learning and communicating is more than just placing information on the Web; it requires new skills to produce Web sites and to communicate with learners”(¶ 14). Marti (2001) also noted that instructional designers need to possess a diverse range of skills when designing for the Web, namely skills in management and technology, and the ability to adapt to multiple situations and work with diverse populations.

What these researchers and writers are indicating is that the experiences of instructional designers are changing as a result of the emergence and growth of WBL. However, we do not have a clear insight into just what their experiences are. For example, Liu et al. (2002) stated that “few know what instructional designers are, what they actually do, the challenges they face, and the skills they need” (p. 198). Furthermore, Maistre (1998) noted that “there appears to be no definition of the expert instructional designer, nor of what constitutes expert[ise] in any component of instructional design” (p. 21). Much of the success of WBL will depend on the experiences of instructional designers and on how they make use of their particular skills, knowledge, and expertise to design and help deliver this new form of learning.

To help ensure and promote the success of WBL, the experiences of designers of WBL will need to become the focus of attention and inquiry. This focus will be particularly

important at, for example, the post-secondary level where instructional designers are preparing Web-based courses. The purpose of this study is to investigate the experiences of five instructional designers who are designing for WBL at the post-secondary level. Some questions that can guide inquiry into their experiences include: In what type of environment do designers of WBL work? What are their roles and responsibilities? What have been some of their successes? What have been some of the challenges which they have faced and overcome? How do they feel about their experiences and about the emerging profession in general?

Significance of the Problem

Much of the success of WBL will depend on the experiences of instructional designers and on how they make use of their unique skills, knowledge, and expertise to design and help deliver this new form of learning. Cox and Osguthorpe (2003) proposed that “studying the practice of the instructional design profession could lead to insights that can be gained in no other way” and that the ways in which instructional designers “act, think, talk and create define the nature of the profession” (p. 3). Liu et al. (2002) noted that “obtaining the perspectives of practitioners in the field will provide the information needed to accurately assess the evolving responsibilities of an increasing popular position” (p. 197). This information is then useful to institutions that train individuals—either pre-service or in-service—for the instructional design role so that instructional designers can perform more effectively. Cox and Osguthorpe (2003) further noted that learning how instructional

designers spend their time can: “(1) lead to changes in professional education programs; (2) help supervisors reconsider work assignments; (3) guide researchers as they develop theory; and (4) raise issues related to the future of the profession” (p. 1). They also pointed out that “studying the profession by examining the living practice as it changes and grows...will benefit not only those who call themselves instructional designers, but the students who are the ultimate purpose for the designer’s work” (Ibid., p. 3-4). Such knowledge will be useful in understanding the profession as it is now, newly adapting to the emergent experiences of working in a virtual environment. Ultimately the results of this study can also provide insights that will promote the success of WBL in general.

Limitations of the Study

This study considers only the experiences of instructional designers who are developing for WBL at the post-secondary level. While there are instructional designers working at the K-12 level and in industry, it was not within the scope of this study to consider their experiences. The designers studied work in two urban areas in the province of Newfoundland and Labrador, Canada. It was not within the scope of this study to consider the experiences of instructional designers across Canada, the U.S. or the world. The study is also limited to consideration of individuals working in post-secondary institutions, all of which are publicly funded. These institutions offer both credit courses, towards programs, and non-credit professional development Web-based courses to students around the world. The study is further limited in its data collection method, as only the interview and

questionnaire were used to gain insight into the experiences of the instructional designers studied. No observations were conducted of the participants in their work environment.

Overview of the Study

Chapter One serves as an overview to the study. It outlines the problem, its significance, the purpose of the study and the limitations of the study. Chapter Two presents an overview of some of the pertinent literature related to the experiences of instructional designers involved in WBL. The studies reviewed explored the role(s) and responsibilities of instructional designers developing for this new form of learning, the challenges they face and how they overcome these challenges, as well as the skills needed to be an effective instructional designer. The chapter then explains how this study will add to the existing body of knowledge, outlining how its purpose and methodology are similar to, and different from the studies reviewed.

Chapter Three presents an overview of the research design and methodology, explaining the case study method and how participants were selected. It then describes the three phases of the data collection process, namely the questionnaire and two semi-structured interviews. The chapter then outlines how the cases were compiled into individual case records and reports for each instructional designer. Chapter Four presents these five case reports that draw together and organize the case data of each participant into a comprehensive, primary resource package.

Chapter Five provides a synthesis and cross-case comparisons of these five cases, highlighting their similar and unique experiences in designing for WBL. The chapter then presents comparisons of these experiences with those found in the literature. Conclusions are drawn and implications for practice are considered. The chapter ends with implications for future research.

Summary

Within the last decade, WBL has emerged and is also growing exponentially as a new form of learning. Instructional designers play an important role in the design and development of this new form of learning, particularly at the post-secondary level. As a result of the emergence and growth of WBL, the experiences of instructional designers are changing. However, we do not have a clear understanding of what their experiences are. To help ensure and promote the success of WBL, the experiences of these instructional designers will need to become the focus of attention and inquiry. The purpose of this study is to gain insight into the experiences of instructional designers at the post-secondary level who are designing for WBL. Their experiences are considered within the perspectives of work environment, roles and responsibilities, successes and challenges and the designers' reflections on their experiences. Five case studies were conducted for five instructional designers respectively. These designers work in four publicly funded post-secondary institutions in the province of Newfoundland and Labrador, Canada. Such knowledge will be useful in understanding the profession as it is now, newly adapting to the emergent

experiences of working in a virtual environment. Ultimately the results of this study can also provide insights that will promote the success of WBL in general.

Chapter 2: Literature Review

Introduction

Chapter Two presents an overview of some of the pertinent literature on the experiences of instructional designers who design for WBL. It considers current research into the following: the role(s) and responsibilities of instructional designers; the challenges they face and how they overcome these challenges; and the skills required of an effective instructional designer. The purpose, methodology, findings, and conclusion(s) of each study reviewed are presented. The chapter then describes how this study will add to the existing body of knowledge, outlining how its purpose and methodology are similar to, and different from the studies reviewed.

Role(s) and Responsibilities of Instructional Designers

Three studies were reviewed that explored the role(s) and responsibilities of instructional designers as they design for WBL and one which studied how designers of WBL spend their day. One which explored the roles and responsibilities of instructional designers in the development of new media instructional materials was conducted by Liu et al. (2002). To determine these role(s) and responsibilities, the researchers interviewed 11 instructional designers working at multimedia companies in Austin, Texas. The time span of the interviews ranged from 45 minutes to two hours with most conducted face-to-face, two completed online and one by phone. The instructional designers studied were asked 141 interview questions, 70 of which focussed on the role of the instructional designer as course

designer, and 71 of which focussed on other related duties performed by instructional designers in their role. The interview questions addressed such areas as: (a) the instructional designer's background information; (b) the instructional designer's roles and responsibilities; (c) company information; (d) design and production process; (e) teamwork; (f) prototype development; (g) interface, instructional and interaction designs; and (h) formative evaluation. The interview data were transcribed, chunked and coded on the basis of patterns detected; the data were then sorted into categories according to common themes using the research questions as a guide.

The authors found that instructional designers are heavily involved in the course development phases of planning and designing with their major responsibilities involving working with clients, working with subject matter experts, working with other team members, and designing. When working with clients, instructional designers must understand what the client needs and design a plan to meet these needs. When working with content experts, instructional designers must understand the subject matter of the materials to be developed. The study found that some instructional designers also wear the hat of a project manager. A typical day for the instructional designers studied involved checking e-mails, having meetings and working at the computer. When asked, instructional designers described their work environment as fast-paced, collaborative, casual and flexible. They expressed job satisfaction from working with clients, learning new tools and keeping up with technological changes, developing products, and being creative. The instructional designers recognized the importance of "learning by doing," "providing experience," and "learning

from mistakes” (p. 204). They felt that it is important to have technological expertise in some popular software tools, as they may have to quickly draft a prototype. The instructional designers also indicated that their work is evaluated by their supervisor and/or clients.

Di Corpo (2001) conducted a similar study the purpose of which was to explore the instructional designer’s role in supporting faculty in their transition to online teaching and learning. The study drew on qualitative interview data and reflections of an instructional designer to chronicle the experiences of a group of academics who were the first in their faculty to incorporate Web-based classroom management tools into the teaching of their postgraduate courses. The study contrasted the experiences of three faculty members who had received instructional design support with those of three who did not receive such support. The study considered: (1) the faculty members’ approaches to teaching and learning strategies for introducing change; and (2) acceptance by academics of instructional design support in the context of a developmental conceptualisation of the instructional design role. Research data gathered during the study included notes written by the instructional designer studied while providing support, his/her reflections on the process, and interview transcripts from semi-structured interviews conducted with the six faculty members focussing on their experiences in developing online courses.

The study concluded that, because of the instructional design support, faculty became involved in a process of reflection that involved exploring and discussing approaches to teaching and learning, educational goals and effective strategies. Faculty noted that this reflective process facilitated the development of a deeper level of understanding of their

individual approaches to teaching and learning and consequently, made the transformation to the online environment an easier one. In this context, the instructional designer took the role of reflective partner, raising issues that helped faculty work through their approaches to teaching and learning, and so smoothed the transition to the online environment. The author also found that faculty who did not receive instructional design support encountered difficulty transforming their approach to teaching and learning to the online environment. They did not explore with an instructional designer how to increase communication and collaboration with their students online. Two of these academics' experiences revealed little time for reflection on student learning but instead spent their time in crisis management mode, ensuring students gained access to the online material. The three academics with instructional design support felt that they could overcome commonly identified barriers such as intellectual property issues, competence with the technology, time management skills, student motivation, and changed work practices. The author found that the academics with instructional design support felt part of a team working towards a common goal; that their attitudes remained positive; and that they were willing to draw on the expertise of instructional designers to adopt innovations in their teaching. The study also found that "the academics who received intensive and collaborative instructional design support not only maintained their focus on support for students, they expanded their conceptions of what this means and implemented designs that provided enhanced support" (Ibid., ¶ 54). To conclude, di Corpo suggested that "the form and intensity of instructional design support enabled academic staff to be less concerned with the technical and paradigm shift barriers so often

identified as impediments to the adoption of learning technologies, and more focussed on how student learning could be supported and improved in the transition to the online environment” (Ibid., ¶ 3).

To better understand the work and experiences of instructional designers, Pan, Deets and Phillips (2001) conducted an ethnographic case study to present a vivid portrait of instructional designers and provide insights into the instructional design profession. The study’s guiding questions included: (1) what is the nature of the role(s) played by the instructional designer?; and (2) how do the instructional designer’s basic and growth needs interrelate with his personal practical theories and what are the consequences to his performance at work? The study used the following data collection methods: observation, interview, survey, written documents, publications, e-mail correspondence, and videotapes. First, a survey was distributed to 70 colleagues and clients of instructional designers who had worked with them during the previous two years to determine their perceptions of the instructional designer’s role. Next, an instructional designer was interviewed to ascertain his perspective on the nature of his work, the demands of his work, and his personal practical theories. Following this, the instructional designer was observed or studied three hours a week for eight weeks in his interactions with co-workers and clients, with the researcher noting the kinds of tasks performed and how the instructional designer performed them. To conclude the data collection process, pertinent documents (e-mail correspondence between the instructional designer and 25 clients, information on the unit’s and the Human Resource office’s Web sites, and official job descriptions) were analyzed and course Web sites that the

instructional designer maintained and monitored were reviewed. In interpreting the data, the researcher searched for broad themes; then on the basis of the 10 personal practical theories formed and documented by the instructional designer, the researcher matched the theories with the collected documents.

The authors reported that “the instructional designer was described by his colleagues as a professional (i.e., knowledgeable about what he does) who was personable, reliable and humorous” (p. 9). They also found that the relationship between the instructional designer/faculty member was “strong and interdependent,” sort of like “partners and teammates” (p. 10). The faculty members interviewed perceived the instructional designer’s job to be “technical-knowledge-based rather than pedagogically-orientated” (p. 10). The authors noted that “without the technical and pedagogical knowledge from the instructional designer, a course with good content (from the instructor) will not succeed” (p. 11).

The current body of literature reflects that instructional designers wear many hats in their day-to-day duties. For example, Liu et al. (2002) found that the instructional designers in their study performed the following multiple roles depending on a project’s needs: project management; reviewing others’ work; finding clients; writing scripts and technical documents; programming code; creating animations/graphics; and training others.

Similarly, Cox and Osguthorpe (2003) conducted a study to find out how those in the instructional design profession spend their time. The authors distributed a survey via e-mail to 307 professionals in the field inviting them to define their job tasks of instructional designers. The response rate was estimated in the area of 30 - 40%. The study found that

23% of instructional designers' time is spent in original design work, 22% in project management or administrative responsibilities, 14% in meetings, 12% conducting research, and 2% performing additional responsibilities such as analysis, implementation, and evaluation. The instructional designers studied also reported spending a small portion of their time reviewing products, developing, teaching, and performing overhead functions. Cox and Osguthorpe concluded that "designers spend most of their time doing original design and development work and managing projects," with teaching/training, marketing and consulting taking up a small portion of their time (p. 47).

Challenges Faced and Met by Instructional Designers

In the study introduced previously, Liu et al. (2002) also explored the challenges facing instructional designers as they develop new media instructional materials and how they meet these challenges. The authors found that a major challenge facing instructional designers is their guiding of clients and subject matter experts through the design process as many clients expect products to be produced within a short time. To help meet this challenge, the instructional designers studied aimed to receive feedback throughout the design process, ask questions, explain industry jargon, guide clients in making better choices, and inform clients when choices will impact the process of production and the product.

The authors also found that instructional designers in new media development often perform multiple roles depending on a project's needs, which they find challenging. The instructional designers studied also find keeping abreast of new technologies challenging as

“rapid technological advances continuously bring changes and new requirements to the field of instructional design” (p. 208).

Pan, Deets and Phillips (2001) also noted that the subtle relationship between the instructional designer and the faculty member developing the course as being a challenge for instructional designers. The authors found that, while interacting with faculty during the development process, the instructional designer “exerted an influence on faculty by giving constructive advice” and acted as a leader who offered suggestions and guidance, but was also adaptive and willing to show support in maintaining the delicate relationship (p. 11). This often involved being flexible in setting meeting times, often catering to the schedule of the faculty member.

Skills of an Effective Instructional Designer

In the study discussed previously, Liu et al. (2002) also determined the skills needed for instructional designers to effectively perform their job. The instructional designers studied noted that to be successful, they must be life-long learners, flexible, quick to adapt to changes, and adept in picking up new skills. The instructional designers studied met the challenge of keeping abreast of the field by enrolling in courses, attending conferences and training sessions, informally meeting with co-workers, studying competitors’ products, maintaining university connections and involvement, and learning from clients. The authors found that a good designer is a quick study who is willing to learn new things, a team player, one who is attentive to details, experienced, a good communicator and who is self-reliant and

a resourceful problem solver. They also discovered four essential competencies that are required of instructional designers in new media development: (1) communication skills; (2) instructional design skills; (3) problem solving/decision making skills; and (4) knowledge of technology.

Parhar and Mishra (2000) conducted a similar study to determine the competencies needed by instructional designers to effectively develop Web-based instruction. To determine these competencies, the authors distributed a questionnaire to instructional designers asking about the instructional design profession, the institutions to which they belong, their age, gender, total years of experience in their present profession, their involvement in developing Web-based course materials, the subjects of these Web-based courses and the difficulties they faced while developing these courses. The questionnaire was posted on the Internet during the period of July 19th to August 7th, 2000 and distributed to the following mailing lists: the Distance Education Online Symposium List, the International Forum for Educational Technology and Society Discussion List and the Instructional Designer's Forum at Pittsburgh University.

One hundred and five instructional designers responded, most of whom were females from the 35-44 age group. The respondents had all worked as instructional designers in the development of Web-based courses in post-secondary settings for less than 10 years. The study indicated that instructional designers face the following challenges when designing for WBL: working with technology (hardware and software), writing objectives, achieving high quality instruction, working with limited finances, working under time constraints, obtaining

help from team members, evaluating Web instruction, dealing with resistance to change and obtaining administrative and infrastructure support.

The majority of the respondents agreed that instructional designers should be able to competently state objectives in behavioral terms, design instructional materials, identify target learners and conduct needs analyses. Most also agreed that instructional designers should be able to develop performance measures and judge their validity and reliability. They also felt that instructional designers should be able to develop formative and summative evaluation plans as part of their role. The study further indicated that instructional designers need to be proficient in a variety of software application packages, although over half of the respondents felt that instructional designers do not need to know how to produce videos. Most agreed, however, that instructional designers need to be able to demonstrate organizational, time management, problem solving and research skills. They also agreed that instructional designers need to possess the following technical capabilities: be able to type efficiently, format for print and for the Web, code Web sites, utilize Web-based course management tools and analyze emerging technologies. To be successful on the job, respondents further felt that instructional designers should be able to communicate effectively in visual, oral and written form and be able to establish good rapport with individuals and groups.

The Role of This Study

This study will add to the existing body of knowledge on the experiences of instructional designers by conducting five individual case studies of five designers of WBL at the post-secondary level. The perspectives or categories chosen to organize the cases will differ in part from those according to which the review of the literature was organized. The focus on their roles and responsibilities is retained. Added is a category of work environment which provides insight into the context for those roles and responsibilities. The successes as well as challenges that the instructional designers experienced are considered. Instead of a skills category, the study used a category of reflections which represents participants' own insights into and interpretations of the skills required of an effective instructional designer in particular and their experiences in general. These categories form a comprehensive framework from which to consider the experiences of designers of WBL at the post-secondary level.

The study is similar in purpose to the one conducted by Liu et al. (2002), which looked “to practitioners [instructional designers] in the field to find out how their roles are defined, how they handle their job challenges, and how they adapt to the frequent changes in technology” (p. 196). While both studies aim to gain insight into the experiences of instructional designers in the development of new media materials, this study focuses on the experiences of designers of WBL at the post-secondary level. And while Liu et al. focussed more on exploring the challenges faced by instructional designers of new media

development, this study aims to gain insight not only into these challenges, but also into the successes of instructional designers as they develop new forms of learning.

And while both studies are similar in purpose, their data collection methods are somewhat different. To gain insight into the experiences of instructional designers, Liu et al. used only one data collection method, that of conducting standardized open-ended interviews with eleven instructional designers in the Austin, Texas area. The present study, however, provides a holistic perspective on the experiences of its participants through the use of a questionnaire as well as one open-ended interview for some and two for others. These additional methods of data collection provide further insight into the experiences of instructional designers than would have been obtained through only one method.

In their study, Pan, Deets and Phillips (2001) also collected and analyzed multiple kinds of data (observation field notes, interview transcripts, surveys, written documents, publications, e-mail correspondence, and videotapes) in their quest to define the role(s) of instructional designers of WBL and provide insights into the instructional design profession. Using the case study approach, the researchers first distributed a survey to the colleagues and clients of instructional designers to determine their perceptions of an instructional designer's role. They then interviewed an instructional designer to determine the nature of his work, the demands of his work, and his personal practical theories. Next, the researchers observed the instructional designer three hours a week for eight weeks noting his tasks. The final phase in the data collection process involved analyzing pertinent documents and reviewing course Web sites.

The present study is different in both its participants and its purpose. While Pan, Deets and Phillips investigated the experiences of instructional designers, their colleagues and clients, this study considers only the experiences of the instructional designers themselves. While they aimed to provide insight into the instructional design profession through an exploration of the roles of instructional designers, this study aims to provide insight into, not just their roles, but also their work environment, successes and challenges, and reflections on their experiences as they design for WBL.

As well, di Corpo (2001) studied only the role of instructional designers, and more specifically, their role in supporting faculty in their transition to online teaching and learning. In exploring this role, the study drew on: (a) qualitative interview data from academics who were the first in their faculty to incorporate Web-based classroom management tools into the teaching of their postgraduate courses; and (b) the reflections of an instructional designer. Through use of the questionnaire method, Cox and Osguthorpe (2003), on the other hand, explored how instructional designers spend their time; Parhar and Mishra (2000) used the same data collection method to determine the competencies instructional designers need to effectively develop Web-based instruction. The present study also aims to explore the role of the instructional designer, how instructional designers spend their time, and the competencies instructional designers need to effectively develop WBL but takes the further step of inquiring into the experiences of instructional designers and their successes and challenges as they develop these new forms of learning. Instead of drawing on only one data

collection method, this study adopts both the questionnaire and interview(s) to compile a case study of the experiences of each instructional designer studied.

Summary

Chapter Two presented an overview of some of the pertinent literature on the experiences of instructional designers as they design and develop instructional materials for new media delivery and more specifically, for online delivery. The studies reviewed explored the role(s) and responsibilities of instructional designers designing for these new forms of learning, the challenges they face, how they overcome these challenges, and the skills needed by an effective instructional designer. The chapter then outlined how this study will add to the existing body of knowledge, describing how it is similar and different in its purpose and methodology from the studies reviewed.

While the studies reviewed explored different aspects of the experiences of instructional designers, this study aims to provide a holistic view of the experiences of five instructional designers who are designing for WBL at the post-secondary level. In providing this holistic view, the study considers, but is not limited to, the participants' work environment, their roles and responsibilities, their successes and challenges and their reflections on their experiences and the skills needed to become an effective instructional designer. While many of the studies reviewed used only one method of data collection, this study uses both the questionnaire and the interview to gain insight into instructional designers' experiences in designing for WBL.

Chapter 3: Methodology

Introduction

Chapter Three presents an overview of the research design and methodology of the study. It begins by describing the research design adopted, that being the case study method, and then proceeds to explain how the individual cases were selected for participation in the study. The chapter then outlines the data collection process, describing in detail its three phases, and ends with an explanation of how the data collected were compiled into a case record for each instructional designer studied. These individual case records were then used to write a case report, providing insight into the experiences of each designer of WBL at the post-secondary level.

The Case Study Method

A collective case study method was adopted to gain insight into the experiences of instructional designers at the post-secondary level who are designing for WBL. This method involves studying a number of cases in order to investigate a phenomenon (Denzin & Lincoln, 2000). The cases of interest for this study were the experiences of five instructional designers. The cases were organized according to the participants' work environment, roles and responsibilities, successes and challenges and reflections on their experiences and on the skills required of an effective designer of WBL. The case study method allows for the gathering of "comprehensive, systematic, and in-depth information about each case of interest" and once collected, involves "organizing the data by specific cases for in-depth

study and comparison” (Patton, 2001, p. 447). Although the study presents cross-case comparisons and syntheses, “the analyst’s first and foremost responsibility consists of doing justice to each individual case” (Ibid., p. 449). Denzin and Lincoln (2000) also noted that a case study is “a concentrated inquiry into a single case” and must provide “a thick description of [the] case’s own issues, contexts, and interpretations” (pp. 436, 439).

Throughout all stages of the data collection process, the researcher compiled the information gathered about each respective instructional designer’s experiences into a case record. The purpose of this case record was to “pull together and organize the voluminous case data into a comprehensive, primary resource package” (Patton, 2001, p. 449). Denzin and Lincoln (2000) noted that, with the case study method, “write-up begins with [the] preliminary observations” (p. 445). As phases of the data collection process were completed, the individual case records were added to and/or information already in existence clarified. Following the final data collection phase, these case records were then used to write a case report of each instructional designer’s experiences in developing for WBL. This report described their work environment, their roles and responsibilities, their successes and challenges and reflections on their experiences. Once all case reports were written, they were then synthesized and compared and considered in relation to the literature. However, as Patton (2001) cautions, even though several case studies may be compared and contrasted, the basic unit of analysis remains the distinct cases, and the credibility of the overall findings will depend on the quality of the individual case studies.

Selection of Participants

The five instructional designers selected to participate in the study all design for WBL at public post-secondary institutions in two urban centres of Newfoundland and Labrador, Canada. The designers volunteered to participate and signed a consent form (see Appendix A). Three of the participants were female and two were male. Three of these designers hold a Masters degree as their highest education level, one a Ph.D., and another a college diploma. Three of the participants have been designing for WBL for many years with two relative newcomers to the field. Thus, the selection of participants reflects sufficient variety and diversity of education and experience and allows for insight into differences in individual context, style, approaches and behaviors. At the same time, there is sufficient similarity between the five cases given that they are all located within the same province and are all designing for WBL at the post-secondary level. These similarities will help highlight common experiences.

The Data Collection Process

The data collection process consisted of the following three phases:

1. Phase I: Structured questionnaire
2. Phase II: Semi-structured interview
3. Phase III: Semi-structured interview (as needed) and member checks

The process of using more than one phase serves to clarify meaning by “identifying different ways the phenomenon is being seen” (Denzin & Lincoln, 2000, p. 444). The process also

“provides the indispensable ability to control for fallible information but at the same time allows for the unearthing of information that might have been overlooked with just one form of data collection” (Murrin, 1962, p. 26). Each phase is described in detail as follows:

Phase I

Phase I of the data collection process involved the distribution of a structured questionnaire to the participants. The purpose of this questionnaire was to elicit background information on each participant which served as an introduction to each case study in the final report. The questionnaire inquired into their education and work experience, work environment and schedule, professional development opportunities and available resources, roles and responsibilities, and successes and challenges in designing for WBL. The responses given helped the researcher to devise questions for the second phase of the data collection process and also helped focus the interviewees' responses during Phase II. The Phase I questionnaire was distributed via e-mail as an attachment since the study's participants worked in an online environment and were very familiar with communicating using this medium. The questions asked were direct, specific and predetermined. However, the researcher relied on additional questions depending on the participants' responses. A copy of the questionnaire is included in Appendix B.

Phase II

Phase II of the data collection process involved a semi-structured interview. The purpose of the interview was to provide an opportunity for each participant to elaborate on responses given in the questionnaire and to describe, in their own words, their experiences in designing for WBL. As Denzin and Lincoln (2000) noted, “interviews generate useful information about lived experience and its meanings” (p. 633) and “because different people experience situations from different perspectives, a reasonably representative picture of the occurrence and absence of a phenomenon may emerge [in an interview] and provide a basis for interpreting it” (Tuckman, 1999, p. 403). Tuckman further noted that “interviews often prove the major sources of information about people’s intentions and other subjective elements of observed phenomena” (p. 404).

As stated previously, the interview questions were derived partially from participants’ responses to the questionnaire distributed during Phase I of the data collection process. For example, respondents were invited to list their successes and challenges in designing for WBL. Their responses provided the researcher with preliminary insight into their experiences and were also used as a basis for the interview questions. For example, if a designer noted a lack of resources as being a challenge on the questionnaire, then during the interview the researcher would ask him or her what types of resources were lacking (e.g. human, financial) and how this lack of resources impacted on his or her experiences. Thus, some interview questions were customized for particular participants depending on their questionnaire responses. While the questions were written and pre-ordered in advance, the researcher could

deviate from this order and ask additional questions depending on the responses provided by the interviewees. Appendix C provides a sample of the interview questions asked during Phase II.

Phase III

After the first two phases of the data collection process were complete and the data compiled into a case record for each instructional designer, the final stage of the data collection process involved the researcher conducting a second interview, as needed, to clarify information already obtained or to retrieve additional information. During this semi-structured interview, the researcher inquired into inconsistencies in a designer's case data, asked a designer to elaborate on a previous response and/or asked a designer new questions which may have arisen as a result of another participant's responses. This interview was matched to individuals and circumstances as needed. A second interview was conducted for two of the five participants due to inconsistencies in their case data after Phases I and II were complete. Once all questions were answered and inconsistencies in responses clarified, the case records were then used to write case reports describing each participant's experiences in designing for WBL at the post-secondary level. These reports were then provided as member checks to each respective participant for review and comments. Changes were made where indicated necessary by the participant.

Data Analysis

The data analysis process was completed in six stages. The first stage involved transcribing the interviews, resulting in a total of 73 single-spaced pages. There were also 18 pages of data from the questionnaire responses. The 91 pages of data from the interviews and questionnaires were compiled into a case record for each participant outlining their experiences in designing for WBL. In the second stage, the data in each case record were grouped and reduced for the purposes of analysis into the four categories of work environment, roles and responsibilities, successes and challenges and reflections. This process of data reduction involved extracting from the 91 pages information provided in response to the questionnaire that was also elaborated on during the interview(s). The result of this data analysis stage was 85 single-spaced pages of data for the five designers combined.

In stage three, these case records were analysed a second time in order to focus in more specifically on their content. This analysis involved “selecting, focussing, simplifying, abstracting and transforming the data” (Miles & Huberman, 1994, p. 10) derived from the case records into case reports that described each participant’s experiences in designing for WBL. This data reduction or data condensation occurred through summary and paraphrase and is “a form of analysis that sharpens, sorts, focuses, discards and organizes data in such a way that final conclusions can be drawn and verified” (Ibid., p. 11). This process reduced the amount of data from 85 single-spaced pages to 68 double-spaced pages.

From these case reports, key words or phrases (e.g. change, specialist, team) were then extracted and displayed in a spreadsheet-like grid based on the four categories of work environment, roles and responsibilities, successes and challenges and the participants' reflections on their experiences. This data display is an "organized, compressed assembly of information that permits conclusion drawing and action" and "helps us to understand what is happening" (Ibid., p. 11). The fifth stage of the data analysis process involved identifying patterns from among the keywords and phrases found in this data display. Noting patterns or themes helped the researcher "see what goes with what" so that she could better synthesize the data (Ibid., p. 245). The researcher also used this data display to make contrasts/comparisons between cases which "is a pervasive tactic that sharpens understanding" (Ibid., p. 245). In the six and final stage of data analysis, these syntheses and cross-case comparisons were analyzed to present a composite of the designer of WBL at the post-secondary level.

Summary

A collective case study method, whereby the researcher jointly studied a number of cases, was adopted to gain insight into the experiences of designers of WBL at the post-secondary level. The cases of interest were five instructional designers working in four publicly funded, post-secondary institutions in two urban centres of Newfoundland and Labrador, Canada. For each individual studied, case data were collected and analysed, then synthesized and compared with the other cases.

Phase I of the data collection process involved the distribution of a structured questionnaire. The purpose of this questionnaire was to elicit background information which served as an introduction to each instructional designer in the final report and was also used to devise questions for Phase II. The second phase of the data collection process consisted of a semi-structured interview that provided the participants with an opportunity to elaborate on their experiences in designing for WBL at the post-secondary level. While data were being gathered during the first two phases, it was being compiled into a case record for each instructional designer.

Once the data were compiled from these two phases, each case record was then reviewed by the researcher to determine if there were inconsistencies in the data or if further clarification was needed. If either was the case, then the researcher conducted a second interview with the respective instructional designer(s) to obtain this information. For two of the cases, additional information was needed, thus individuals had to participate in a second semi-structured interview. These case records were then used to write case reports, which described each participant's experiences in designing for WBL at the post-secondary level. The researcher then conducted a cross-case synthesis and comparisons of these reports which was then used to present a composite of the designer of WBL at the post-secondary level.

Chapter 4: Presentation of the Cases

Introduction

Chapter Four presents the case report of each instructional designer studied, providing a holistic perspective of their experiences in designing for WBL at the post-secondary level. Each report paints a picture of the respective designer's education and work experience, work environment and schedule. It then describes, in detail, their roles and responsibilities, and successes and challenges in designing these new forms of learning. It ends with the instructional designers' reflections on their experiences and the skills required of an effective designer of WBL.

The Case of Beth

Beth works as an Instructional Design Specialist at a post-secondary college. The college offers over 90 full-time programs and more than 300 part-time courses, providing education and training to provincial, national and international students and clients. Beth is a relative newcomer to the instructional design profession, having worked in the field for six years although she has been involved in WBL for much longer than that. Early in her career, Beth participated in an evaluation committee at the college which reviewed learning management systems. As a result of the committee's work, WebCT™ was adopted as the college's e-learning delivery tool. Over the years Beth has worked at a school district on distance learning projects and also formed her own private consulting firm performing such

duties as instructional design, online course development, research and project evaluations. Beth has worked with the college both as a consultant and now as a full-time employee.

Beth's first degree is a Bachelor of Commerce in the area of Management - Information Systems. She completed a second Bachelors degree in Education (Post-Secondary) and her graduate studies involved completing a Master of Education degree online in the area of Information Technology. This combination of education and work experience (particularly as a Systems Analyst) helped expose her to both systems design and instructional design, which she explains:

After [graduating], ...I first worked as a Systems Analyst and got into designing networks and conducting training. There were components of instructional design integrated all the way along which I had an interest in. I liked the whole systems approach to doing things and strategic planning, which I have done a lot of, anything which fits that systems design model of doing things.

Work Environment

Two other instructional designers work alongside Beth in the distance education unit. These designers work with subject matter experts, media specialists, graphic artists, a librarian, and bookstore personnel in the development and delivery of online courses. At Beth's workplace, there is currently a need for more media specialists and graphic artists; thus some work in this area is done in partnership with private sector from time to time. Even though there are no video producers on staff, the unit does have video development capacity as Beth explains:

We don't do a whole lot of video but we work with faculty who have skills in video. We also have a local community channel with a studio on campus and they have video people that we can access... Our staff perform multiple roles here [including video editing]. We don't do high end video production but we do modest video. We don't do any videotapes to send out in courses, we only do Web clips and sometimes send them out on CD for those who are in low-bandwidth areas or who request them. We don't have a lot of video in our courses but we use a moderate amount of video conferencing as many of our students are on-campus at other campuses and the college has a sophisticated 19 site internal video conferencing network with external ISDN links.

Beth consults with many of her colleagues during the development process. For example, she may "bounce ideas off" other instructional designers or ask them to review her work. She may also ask student support personnel, faculty members who are well versed in WebCT™ and colleagues who are novice learners to test a product or to give advice in their areas of expertise.

During the course development process, Beth feels needed technology such as the following is readily available: Dreamweaver™, Homesite™ and Frontpage™ for coding Web pages; Adobe Photoshop™, Macromedia Flash™ and Director™ for creating graphics and animations; video and audio file editing software; electronic help desk software; and word processing software. What is lacking, according to Beth, are the human resources, particularly graphic artists and multimedia specialists, needed to create graphics and animations using these programs. What Beth would like to see, in terms of technology, to help produce a higher quality learning experience for students, are synchronous tools with audio capabilities built in. If a piece of technology cannot be obtained for development, Beth devises a work-around as she explains:

Sometimes you don't need it but you want it, so often judgements have to be made. Sometimes a photograph will do, instead of having an animation you would use two or three photographs, you do a similar diagram, add a little more audio introduction to explain the diagram versus having it animated. You work around it.

As part of her professional development, Beth attends one major conference per year and one regional/local conference. She feels this amount of professional development is adequate and emphasizes that her employer is very supportive of her professional development pursuits.

To help ensure a quality learning experience for students, the college dictates faculty not be allowed to teach online unless their course has previously been taught in the classroom and they have received training in the online learning management system, WebCT™. To promote quality and ensure ease of navigation for users, the majority of online courses are developed using standardized templates. Quality assurance is also maintained through the use of an online student satisfaction survey. This survey is anonymous and part of every online course with the students' comments on instructor participation and feedback going back to the faculty member and students' comments on site design going back to the instructional designer who developed the course.

Roles and Responsibilities

Beth's main roles and responsibilities as an Instructional Design Specialist include project management, instructional design, faculty training, course planning, international consulting, proposal and report writing, presenting, and sitting on committees. A typical day

on the job for Beth involves checking e-mails (30-40 a day), assigning work, conducting training sessions, storyboarding, meeting with subject matter experts and external clients, reviewing courses, attending meetings and working on courses. Beth describes her typical workday in the following excerpt:

I first go through my e-mails, use Outlook's taskbar, scheduler, calendar, consult all that. I assign work using Outlook - course reviews - to one of the help desk people. When something comes across my desk, I'll review it and assign it. Some days I might have training or meetings and sometimes I can sit down and open up a course and tackle it. I will scan the list and see what I have to do.

As the senior instructional designer, Beth works with the services coordinator to determine, and plan for, next semester's Web-based courses. In this planning role, she also provides input into the college's financial obligations in terms of remunerating content experts for course developments/re-developments and helps determine the amount of faculty training needed. For example, because the college is moving to a new version of WebCT™ later this year, they have to plan for this update. "We need to rework our learning guides and our Web site; we have to review our courses and we have to do a whole series of workshops on training," explains Beth.

Once course offerings are decided, Beth then adopts the role of project manager in identifying and troubleshooting problems with these courses to ensure they are ready for delivery. Beth describes her project management role:

[For new courses and redevelopments] what I do is look at the provincial learning guides and ensure that the course is meeting them adequately and if there are things that I flag, then I bring them up with faculty and the instructional chair... We do evaluations at the end of every semester for every course - a continuous improvement process. If things come up in these

evaluations, then I'll say that this is an area that we need to look into and make some suggestions... We do have a set of guidelines... that we use for new courses and existing courses. I provide faculty with this list and they don't get paid [for new courses or redevelopments] until all of these are met or some strategy is put in place to take care of it.

To aid this process, Beth has developed a quality assurance checklist that rates Web-based courses on a scale from one to five depending on their design. Courses receiving a rating of one, two or three would be good to run, while those receiving a rating of four or five are put on the back burner until revisions are made. As part of her project management role, Beth ensures that all courses are reviewed before they are re-offered. Beth describes her role in the quality assurance process as follows:

I have reviewed every course developed using this process and rated it 1-5. Ones that are rated 4-5 are put on the list to take off, redevelop or fix up. We constantly have a queue of courses needing to be redeveloped. There is another [quality assurance] checklist we complete every time a course runs which includes the schedule, assessment testing, instructor bio, check links.

As part of her overall project management role, Beth also works closely with the unit's chair on research and proposal writing to obtain contracts on external projects. Once a project is awarded, then they both determine how long it will take to complete, the cost involved and who (i.e. which instructional designer) is available to work on the project. When assigning projects, current workloads are taken into consideration and while a designer may be assigned the role of project manager, he or she can request help of the other designers. "To some degree" Beth oversees the development of all courses and projects, acting as a liaison between the chair, other instructional designers and the help desk staff.

If Beth is assigned the role of project manager on an external project, she first meets with the content expert(s) to scope out the development of the content and then with media specialists to monitor their development of each piece. In this role, she acts as the primary contact, believing “it’s easier when I’m informed than not informed and we’re all on one page.” Even when Beth adopts the role of project manager, she may not always act as instructional designer. At the college these two roles do not act in unison as Beth explains:

My job here is not purely instructional design. I’ve done projects where I’ve done everything from storyboarding to doing html but for the most part now I do project management, oversee the storyboarding and review all pieces, keep everything on time, spreading it out to whoever is going to do it and then bringing it back. I deal with the client or faculty person but I tend to take a management role - [we] have two instructional design assistants and they tend to do the bulk of that work. I do the management of instructional design and the management of different projects.

When she is acting as instructional designer, Beth’s duties vary from course to course and from project to project. Thus far she has been involved in all of the stages of the instructional design process including conducting a needs assessment, identifying learning outcomes, writing activities, reading and editing content, storyboarding content, selecting media and conducting evaluations. Beth describes some of these duties:

[In this role] I go through the course outline, evaluation, objectives and probably get the textbook and sit down with all of the other resources and review them. I can then see how much weight can be put on what... I review material and say ‘this is not clear,’ you should have a Web link in here, maybe we should think about doing a video clip here.

Many of the external projects assigned are developed in-house while others may require Beth to travel to developing countries to evaluate curriculums, provide software and

instructional design training and/or determine a college's readiness for e-learning. Beth describes her role in international consulting:

I generally have a couple of [external] projects on the go. I look at a college's readiness for e-learning. We design the instruments and we look at 'Do they have connectivity?' 'Are faculty ready?' 'What is the attitude of the principal?' 'What are the issues at the college concerning information technology?' and 'If they were to put in a distance learning network, what are some of the things that they need to overcome?' I love that stuff because you learn. I had a group here from India last fall and I did instructional design, train the trainer. And we took their course in Vietnamese and we put it on the Web and we broke it down and I went through the whole instructional design process. I coordinated the training and I brought in others to do different pieces. And then I go back to see how they made out and then train them for two more weeks and run through their course. It's excellent exposure, excellent experience and you learn so much.

If Beth wishes to learn more about a piece of software or online teaching and learning practices, she will engage in research. For example, Beth is currently conducting research on online assessment as many instructors wish to include this new type of assessment in their Web-based courses. In addition to the aforementioned duties, Beth also gives presentations on Web-based technologies and online teaching practices and engages in faculty training on these technologies and practices, report writing and committee work.

Beth attributes her vast number of duties to her varied education and work experience backgrounds. She adds that the college encourages its employees to become involved in areas they are interested in as she explains:

Before I came here I did strategic planning and I do facilitation so I probably get asked to do stuff because of what I bring to the organization - my background. It is really good with the college as they don't say this is your job and this is what you do; it's more 'you're strong in this,' 'you show an interest in this,' or 'we could use you in that capacity,' so there's opportunities to get broader exposure which I really like.

At the college Beth spends the majority of her time developing courses with the average development cycle spanning six months. She cautions, however, that a course is not truly developed in this time frame, that it has to be piloted with student feedback and revisions made before it is labeled complete. Beth feels that this length of time is adequate 'sometimes', but other times not. If she is not satisfied with the end product by its delivery date, then she will put it on the list to be re-developed for next offering.

Once a course is approved for development/re-development and a contract signed by the content expert, then as the instructional designer assigned, Beth first meets with the faculty member via video conferencing or teleconferencing to review the college's course development guidelines. In the following excerpt, Beth provides an overview of her instructional design role in the course development process:

We go through the course outline, determine if the instructor needs training [in WebCT]... depending if they know html or not, [I] get them to do the easy stuff first - syllabus, schedule, biography. Then we get into the content and do one unit first, and then I review the first unit with them in detail and say 'we need more of this' or 'you have to think about this.' As the units go on, I review them less and less. And when it's done, I review it and we probably meet by video conferencing and I make suggestions and they reject or accept and we make some changes. And it gets signed off eventually and then we run it.

Beth explains her instructional design role in the course development process as more of a monitoring one; she ensures faculty members stay on track. In the following excerpt, she describes this monitoring and guiding role:

I make sure [faculty] are on track and make sure there is not too much [content] or not enough. If it is just readings, then maybe they can put up a discussion question and sometimes I use storyboards and sometimes I don't. I review the objectives and ask if they've covered off this. I may suggest a

crossword to reinforce the spelling of the terminology, for example... I've gone in to research the Web for links... I do a little bit of content development too... I'll get them to show me what they use in the classroom (video, handouts, small group work, project work) and then we'll get into assessment (what are you going to use, online, invigilation, how many projects).

Once the content is written, faculty may choose to code it for online delivery using the templates provided, or pass it along to their respective instructional designer so they may ready it for the Web. Beth describes this flexibility afforded faculty in the following excerpt:

[For] most of them we will give them the template and fix it up afterwards; some may not be able to manage it. And some may not feel comfortable and work with their version so we sort of work with what we're got. I'm not too hard and fast on that especially the first time around because we don't want to turn them off.

To carry out these roles and responsibilities, Beth works regular hours (Monday - Friday, 8:30 a.m. - 4:30 p.m.) but sometimes works at home during the evenings and weekends to complete tasks not accomplished in the office. Beth has never been asked to put in these extra hours, but does so if a project is behind or if she wishes to catch up on her work without interruptions. Beth helps develop approximately 30-40 courses per year and feels that due to the huge number of courses assigned, the amount of time devoted by her to each course is minimal. She feels if she had more time, then she would do a "more intensive job" with the courses:

If I had more time, I would do a more intensive job with [the courses]. You can rework it and rework it and enhance it but sometimes you have to be practical and know when to move on. It is not perfect... Learning is not something easily finalized because everybody delivers differently in the classroom and everyone delivers differently online.

In addition to working extra hours at home, Beth travels approximately three-six weeks a year as part of her job. Thus far, she has traveled to many campus locations in Newfoundland and Labrador, Washington, San Diego, Boston, seven Caribbean countries, and State of Qatar and has a trip planned to Vietnam in the near future. Beth enjoys the travelling aspect of her job believing it to be a good opportunity to work on international projects.

If Beth is off sick, there is no one to carry on her workload unless it is a training session which can be handed off to another instructional designer. Prior to taking annual leave, Beth ensures all her work is completed, that it is given to another designer, or the deadline(s) extended.

Successes and Challenges

Beth has encountered numerous successes in designing for WBL. She has worked on many rewarding projects/courses that have received positive feedback. These developments have allowed her to form favorable relationships with faculty, students and clients. Beth describes some of her successes in the excerpts following:

Every now and then you'll work with a faculty member who is very enthusiastic. Students give you really good feedback and had found the course really interactive and know it is better than classroom learning and they recommend the course. And the faculty doesn't complain about the workload and how much more work online is causing. And we've done a string of external projects. There's one we've done for a group of farmers, we did a needs' assessment, designed some courses, did an online pilot, supported them. That was a small business course and it impacted on their business. And we got some really good feedback and good evaluations.

Another favorite project of mine was when we worked with a refinery. It was really good and made a big difference to the refinery in terms of their productivity and safety record. It was not [designed for] WebCT but [was] CD-based and used graphics. It was a content area that I knew nothing about. It was a really good learning experience. And we did video and I picked out what pictures that we wanted shot and I got into the guts of that one. I was the lead instructional designer and I worked with the content expert extensively and did all of the storyboarding and really got into the depth of the whole thing. We got some really good reviews on that one. I really enjoyed it.

Another of Beth's successes was her involvement in international consulting which she thoroughly enjoys because she gets to meet new people and help these people in their e-learning endeavors. Beth describes her experiences in international consulting:

[Through international consulting] I get exposed to different people. It is very enriching professionally because you look at, for example, this workshop that I was at last week, there were people there from the Carribean and all over the world and it was good to see how they do things differently and these people have big needs and the fact that you have an expertise that can help out always makes you feel good. Also, I like traveling, seeing different parts of the world, working with different groups. We are a small team here and small as an organization and work with the same people and it is good to work with different people and learn from them, see how instructional designers do it elsewhere, see how education people do it elsewhere. You bring a lot back every time you go and really appreciate it.

While there have been many successes, Beth has also encountered many challenges in designing for WBL. Such challenges include a shortage of human resources, too heavy a workload, too short a development cycle, receiving content from faculty on time, keeping up with new technology and trying to keep courses fresh. Beth highlights some of these challenges in the following excerpt:

I'd definitely like to have more multimedia people and a couple of more instructional designers to rework some of our courses. It would be nice if faculty could free up more time to work... A copy editor would also be good...Time, money, resources [are also challenges].

Reflections

Beth has achieved numerous successes as an instructional designer, which she attributes to her broad exposure to a variety of learning experiences and to support received on the job and not to what she had learned in school. She is ‘somewhat frustrated’ with the lack of instructional design knowledge gained from completing her Masters degree and feels that the program “somewhat but not really” prepared her for the profession. Some of the practical courses were useful in terms of teaching her how to storyboard content and design Web sites and multimedia presentations and some of the theoretical courses helped her to think and write better, but others were of no help at all. Thus, Beth believes the majority of her instructional design knowledge has been gained on the job and informally from other sources, adding that if she hadn’t had previous experience in the instructional design field, then she may not have had a good idea of what instructional design was upon completion of her Masters program. In the following excerpt, Beth describes her frustrations:

I don’t think that you can learn very much from just one [course]. You almost need to work in a team environment. I’ve done the whole needs analysis throughout various projects and I’ve learned more from working with instructional designers. I did a workshop from the University of Wisconsin and I learned more in those two days about instructional design than I learned in any university course. I also learn a lot from books and Web resources.

Beth considers instructional design to be more of an art than a science believing effective instructional designers possess the following innate qualities: they are creative, flexible, adaptable, able to juggle, willing to learn, and team players who can work with different kinds of people, who are practical (know when to put it down, know when to move

on when the money runs out), able to plan, able to work in challenging environments and who possess organizational skills.

In addition to possessing these qualities, Beth feels that an effective instructional designer should have a systems' approach to thinking - a process that can be somewhat learned but a way of thinking that is almost innate. Beth describes this way of thinking in the following excerpt:

I feel [instructional design] is a way of thinking. You almost need to have a systems' approach to thinking. You can easily see from start to finish, and all of the components needing to be built, and how they all fit together. I have learned not everybody sees what I see... I can easily map it out. It's a visual thing...others take a different approach. I am not saying one is better than the other...just different. When I'm in situations where I can't see that process, I strive to see it... It's a way of thinking. Some people look at it and see one big circle and not how it all connects and they don't think ahead to what the next step is, and they get wrapped up in that one little thing... You can learn the components. The better instructional designers have a systems' understanding... People have different approaches to instructional design... [It is a] bit of an art and bit of a science. You can learn the steps and learn questions to ask and read books and articles, but I think in order to implement it, you need to have a certain way of thinking.

Beth attributes learning so much on the job to the numerous technological changes and her exposure to other designers. She admits that "things that were difficult to do at first are so easy to do now, for example, coding a Web page." She feels her experiences as an instructional designer are forever changing as are faculty's opinions of WBL.

I think we're getting less and less resistance particularly where we have rural campuses because they think if I don't start to develop or teach some distance learning then I might not have a full workload next semester because I don't have the volume of rural students. They look at it as job security.

Overall, Beth's experiences as an instructional designer have been 'overwhelmingly positive' because she doesn't feel constrained in her instructional design decisions and because she receives much support from management and the college:

[At the College] no one said that this is the way that we do instructional design. There may be places that you go where instructional design methods have been used for years and you sort of have to fit in and follow this process. [Our unit's chair] never says this is how you do this so I've been able to take a lot of liberties and flexibility and learn on my own and I like that.

I've talked to a lot of instructional designers and I think that I'm in a good situation here because I feel like I've got support and I think our organization has put a priority on distance learning because we have so many remote and rural campuses. We have to diversify, we need distance learning, we cannot supply every program and every course in every campus because we do not have the faculty or student numbers. The college recognizes that distance learning is a mode of survival for a lot of these campuses so there is institutional support from the president down for distance learning. You're not feeling that you're trying to justify yourselves.

Even though Beth is happy with her experiences in designing for WBL, one thing that she would have done to make her experiences more positive would have been to communicate more with other instructional designers to learn from their experiences.

The Case of Stephen

Stephen is employed as an academic director and assistant professor within a major Atlantic Canadian university. He has worked in this environment for seven years, three years as a manager of distance learning programming and four years in his current position. In his previous position, Stephen managed the design and development of distance education programs in the areas of continuing medical education and community health. It was during this time that the Web emerged as a medium to deliver distance courses; prior to the Web,

distance courses were delivered via teleconferencing, video conferencing, and print media (correspondence). With this move to the Web, according to Stephen, came a higher development cost in that “there is a wider scope of people that you have to bring in... [and] there seem to be more steps [involved].”

Stephen holds a Masters degree in adult education and a Ph.D. in extension studies which encompasses the study of adult education processes and the use of information and communication technologies in community outreach and adult learning. As the dissertation requirement for the latter degree, Stephen designed a conceptual model for evaluating Web-based courses. To add to his education credentials, Stephen is currently completing a diploma in adult education via distance.

Work Environment

The medical school where Stephen works offers undergraduate, graduate, post-graduate and continuing medical education. Physicians who are certified to practice and who are members of the college of family physicians or the rural college of physicians or surgeons are required to complete at least 40 hours of accredited continuing medical education activities within a set time frame. To help them accomplish this, the school has taken the lead in Canada in developing a Web portal of online continuing medical education courses.

Two instructional designers work at the school to lead the development of these Web-based courses. These designers may collaborate with the following team members during the course development process: project manager, subject matter expert, graphic artist, media

producer, copyright officer, scientific writer, evaluator, facilitators/instructors, programmer, and librarians. In the following excerpt, Stephen describes the roles of the scientific writer and evaluator:

A scientific writer is an individual who would be responsible for researching subject matter and drafting written content, diagrams, illustrations, data tables or charts for a physician/content expert to review and approve. It might be someone trained at a masters level with a background in the medical sciences or sciences who is assigned a topic area and some direction from a content expert... An evaluator is responsible for developing program [and course] evaluation instruments... [such as] a course evaluation survey and doing follow-up evaluations of participants in the course to see whether there has been a transfer of learning to practice. They may also have a responsibility for reviewing assessment instruments that are used in a course.

As an instructional designer, Stephen has consulted with all of these team members 'in one manner or another' during the course development process to seek their advice or input. For example, if Stephen wished to include an animation in a course, he would consult with a programmer to see if this were possible. Stephen has also consulted with other instructional designers within the university to gain insight into standardized templates and online testing when expertise was not available on his own team. He has also relied on other departments and schools within the university and outside companies for their technological resources when they were not readily available within his work environment. In the following excerpt, Stephen provides examples of when he had sought technological resources from others:

We'd partner with a private information technology firm, who would help us develop the courses initially because we didn't have the expertise in-house. And then when we wanted to move towards using WebCT, we didn't have the licence and we had to go through [another department] in order ...for us to be allowed to use the WebCT Campus version for delivering the

courses...So if it wasn't for the fact that I thought it was a good idea and we needed to push it forward, we probably wouldn't have got to where we are today.

As part of his professional development, Stephen attends approximately three to four national/international conferences a year in the area of medical education. These conferences are not specifically focused on instructional design; however there are workshops within the conferences that focus on instructional design or program development. In the following excerpt, Stephen describes how these conferences provide him with an opportunity to network with other instructional designers and also how the education program he is currently completing is more beneficial in terms of providing instructional design knowledge:

The conferences don't have a lot of focus specifically on the intricate aspects of instructional design but it's good to get out there and network and sometimes in the workshops, you learn what other institutions are doing and how they are doing it... In the past three years I've been doing a post-graduate certificate from the University of British Columbia in distributed learning... I consider that to be more helpful to me... There are courses on program development, Web-based learning, they don't just focus on Web-based, it's all the technologies like video conferencing, etc. There's a lot of theory in the courses. For me, I found that to be most beneficial in doing those structured university courses.

Roles and Responsibilities

In his current position, Stephen's main responsibilities include leading innovation and change by collaborating with faculty, departments and divisions in educational research and scholarship; providing faculty development, consultation and technical assistance in curriculum development, instructional design, distributed learning technologies, evaluation

and assessment, and professional health education research; coordinating and developing interprofessional and medical education programming at the undergraduate, post-graduate and continuing education levels; seeking external funding and collaborating in the writing of grant proposals; preparing manuscripts for publication and presenting research papers at professional and academic conferences; forecasting and managing budgets; and supervising professional and administrative staff. A typical workday for Stephen involves checking e-mail, making phone calls, attending meetings, writing reports or manuscripts, conducting faculty development workshops, teaching, developing evaluation instruments, supervising staff, and conducting research. In the following excerpt, Stephen describes a typical day on the job:

When I get in, I check my e-mail, probably make some phone calls. I might spend an hour or two working on a report or a manuscript that I've been preparing. I might then go to a meeting of a committee. For example, I just came from a meeting this afternoon of an advisory committee on interdisciplinary continuing education which I chair... I might have to do a faculty development workshop... or I might be checking a Web-based course that I'm teaching... I might have to develop a program evaluation instrument... I might be reviewing work of staff... There is a number of research projects going on right now and I'm the principal investigator so I may have research assistants popping in with work they want me to review, [or I may be] organizing a meeting of the co-principal investigators of that research project.

As an assistant professor of medical education, Stephen is responsible for educational research and faculty development, collaborating with faculty on research, evaluation and assessment. Part of this role involves leading program evaluations and helping design and develop innovative techniques and methods for assessment. In this role, Stephen also chairs program evaluation committees responsible for advising the undergraduate medical studies

committee on methods and procedures of assessment. These committees focus on methods that are used for evaluating medical students and the validity and reliability of those methods because of the high stakes examinations which take place.

Up until a few months ago, Stephen held the position of Director of Faculty Development whereby he organized and planned workshops for faculty and medical residents on teaching and learning. Along with the aforementioned duties, Stephen has also taken on the role of Director of Research and Development with a responsibility for fostering educational research and development within the faculty and within the area of continuing medical education.

In his current position, Stephen's instructional design role is at a broader leadership level in terms of "trying to bring groups together to help lead instructional development projects, whereas the instructional design tasks might be undertaken by an actual instructional designer within the faculty." Stephen believes there to be two levels of project management in the development of Web-based courses: one carried out by the instructional designer; and the other by the actual project manager. In the following excerpt, Stephen describes these two project management levels:

...you can have a project manager/instructional designer, so that person would be responsible for managing the course or project, but at a broader level you may have a project manager who is responsible for overseeing the development of a series of courses so there are different project management responsibilities at the different levels.

Aside from educational research, faculty development and his broader instructional design role, Stephen engages in report writing, manuscript preparation and undergraduate and

graduate teaching. He also chairs academic committees, presents at national and international academic and professional meetings and advises and consults with provincial and federal government departments in the areas of e-learning, distance learning, continuing professional health education and interprofessional education. In the following excerpt, Stephen describes his consultation role:

I've been asked to consult on a number of occasions with Health Canada. One project that they were developing, e-learning or Web-based learning for public health workers across the country in the area of health surveillance, I consulted on that project as an education specialist. So I helped design an initial instructional design framework for a prototype of a course that they developed so that prototype has been taken and used for subsequent models or modules that they've developed. I'm also currently consulting with the Federal government on interdisciplinary learning. They're developing an initiative to help foster interdisciplinary learning among health professional schools across Canada and I'm advising them from an educational specialist or educational expert perspective on how to go about doing that.

In terms of his role as an instructional designer, Stephen follows a set process in the development of Web-based courses. First he holds an initial meeting with the subject matter expert to review the course objectives and/or topic(s) and discuss what is involved in readying a course for online delivery. At this meeting, Stephen showcases a Web-based course, discussing the tools and/or technologies used to support the learning experience. If the content expert has previously taught the course in the classroom, Stephen asks him or her to describe the experience to determine whether some of the teaching techniques used could be transferred online. In the following excerpt, Stephen describes how he helps faculty members envision the move to online learning:

...some faculty members were comfortable in how they had outlined the course [in the classroom] and the topics and the materials and they were

comfortable with the content and delivering it in a certain way, so rather than try and impose my ideas or perspectives on how something should be taught, I was trying to be more of an enabler or facilitator saying ‘This is the potential, this is what it can do. How does this fit with how you have taught? What are you comfortable with? What’s your perspective on how things should be taught? What’s your teaching style?’ and we’ll try and accommodate that.

After the initial meeting, Stephen designs an outline or blueprint of how the course could look on the Web and identifies activities that could be integrated well online. He then presents his plan to the content expert outlining the course development process and production time lines. Then as content is submitted by the content expert, Stephen performs a review/edit of the material and sometimes write activities or cases to match the content. In the following excerpt, Stephen describes this authoring role:

Oftentimes, subject matter experts were giving me lecture notes or copies of slides that they may have used in the classroom, so it wasn’t really in a format that you could easily take and put on the Web. It required some editing in terms of putting it into a narrative form which would fit with Web-based learning... Some of the courses that I’ve worked on, I’ve probably authored half of the course... in terms of writing activity descriptions or instructions for students. As part of reviewing the content, something may spring out at me saying this may be a good place for an activity or case study and I may actually do up a draft of a case study and bounce it off the faculty member.

After a unit of content is authored and storyboarded by Stephen, he then passes it on to the Web developer to be coded. Then he presents this prototype to the content expert for his or her approval before proceeding with the remainder of the content. Stephen chooses not to code because he feels it is not a “good use of resources” as he is trained as an instructional designer and not to code in HTML.

As part of his role, Stephen meets regularly with individual team members to ensure course development stays on track. He does not see a need to bring the whole team together at any one time; instead he sees himself more as a “central project manager” or “contact” with everything fed through him so that he can feed it out to the different people that do the work.

To carry out these roles and responsibilities, Stephen works Monday - Friday, 9:00-5:00 at the office with at least an hour spent each evening working at home. During the evening hours, he may be teaching online, performing consulting work or reading, because there are fewer interruptions in this environment. Stephen stresses that there is always work that he can bring home but he puts limits on it. In total, he works approximately ten hours of overtime a week. Three to five of these hours are necessary to keep up with work commitments, with the other five his choice.

If Stephen is off sick, no one picks up his workload, so he has to catch up when he returns to work, unless he has delegated duties prior to becoming ill. If he is working on a course or project that he feels is not going to be ready by its due date, then he works the extra hours to ensure it is ready. However, he cautions, “You have to be realistic about the amount of work and whether you can get the work done in the period of time that you have set for it.” He then adds, “If more than a few hours overtime are needed to complete the course or project, then more human resources are needed.”

Successes and Challenges

Stephen's greatest successes thus far have been at the conceptual level, in terms of planning for large-scale WBL projects. One such project involved a consortium approach to delivering Web-based continuing medical education in Canada. Another project which Stephen deems a success involved going from a strictly audio teleconferencing program to a program that uses Web casting with audio teleconferencing so that participants can view synchronous live presentations in real time over the Internet while also participating in the audio teleconferencing session.

Stephen is also proud of his research on evaluating the effectiveness of WBL and determining the best way to facilitate or deliver WBL to physicians and other health care providers at a continuing education level. In the following excerpt, Stephen describes his research focus:

My research is focused, to a large extent, on continuing education, which is different from university credit courses... in terms of the physicians and practitioners. Although it's mandatory continuing education, they can be more selective in how they go about receiving their credits. So there are a lot of different variables there which influence the adult learners' participation in the different types of programs that are offered. So in terms of evaluation, I would like to think that I am one of the experts in the area in the country in terms of Web-based continuing medical education.

Stephen has faced and overcome many challenges in designing for WBL. One such challenge involved initially learning the technologies used to develop online courses. Stephen believes that, as an instructional designer, you need to have a fundamental understanding of how these technical programs work. Stephen describes the challenge of learning these new technologies in the following excerpt:

Initially when I was new to instructional design for Web-based learning, it was a learning curve – learning about the new technologies, learning about technical aspects of the Internet, HTML, etc... I don't think that you need to be a HTML programmer but I think you need to understand what HTML is, even if you just did an introductory course, so that you are aware of tags and how HTML coding is done. I think it certainly helps to have that awareness. If you are working with WebCT, I wouldn't say you need to know the ins and outs, but you have to have a good familiarity and be comfortable with WebCT and the different tools that are available in WebCT for designing courses.

Another challenge faced by Stephen early in his career was learning the instructional design process, “not in the sense of theory or principles, but learning instructional design in a practical sense, actually designing a WBL program and managing all of the different aspects of the instructional design process – human resources, time management, project management.”

A third challenge which Stephen continuously struggles with is learning how to effectively work with difficult team members, e.g., “ensuring subject matter experts understand how to write effectively for Web-based materials and keeping subject matter experts on track and motivated in terms of authoring materials and participating in media production projects.” Stephen considers the instructional designer- subject matter expert relationship to be very important to the course development process stating, “if there isn't a good rapport there, it's certainly not going to be helpful for the instructional designer if it comes down to the crunch in getting materials from the subject matter expert.”

Reflections

Overall, Stephen feels that his education and training have provided helpful insight into the instructional design field, as he explains in the following excerpt:

In [completing] my adult education degree and diploma in adult education, ...[during] course work that I did in the area of program development and the steps of designing educational programs for adults, I found a lot of similarities between those stages in program development and instructional design steps and frameworks (your needs assessment, your objectives, designing the program, developing the program and materials and delivery and evaluation).... The only main difference is that in instructional design for distance education or educational technology, you have to focus more on the use of the technology and how you are going to match the different attributes of the technology with the activities that you are organizing and even the objectives that are planned for the course... Also with instructional design work for educational technologies, ...there's more formative evaluation that you can build into the stages of instructional design...

However, he does feel that all “can’t be totally learned in the classroom” as he explains:

You can teach the concepts and the theories. If you look at some of the more detailed instructional design models, there are a lot of steps there that in reality you’re not going to be doing. Not every project you’re going to be doing requires a needs assessment or a task analysis or formative evaluation. It’s good in theory to have an understanding of the concepts and the principles and the steps and the different models for instructional design. It certainly helps in your work in how you organize your work and the tasks that you have to do and also in interacting with subject matter experts because you’re considered to be the expert in instructional design, so you have to be able to converse about and articulate those concepts and theories. You have to know it so that you can articulate and apply it but a lot of it you learn from your life experience. You come to realize that you can’t take something out of a textbook, a theory, and always apply it in every situation so there is a lot of practical experience that you gain from being an instructional designer which is helpful.

Also, Stephen feels that individuals must possess certain innate qualities to be effective instructional designers. For example, they must have good interpersonal, communication, and computer skills and be creative, innovative, enthusiastic, dedicated, and motivated.

During his career, the biggest change in Stephen's role as an instructional designer came with the transition to WBL. In the following excerpt, he describes this new role:

With audio conferencing and video conferencing, I would consider it to be more of a coordinator or manager role. There is not as much instructional design work in terms of spending time with faculty or the subject matter expert, or planning out the activities and then following up in terms of managing the work that has to be done by the subject matter expert, or working with the graphic artist to have certain charts or diagrams prepared. There just seems to be more involved with Web-based learning in terms of development than with the other technologies.

Not only had his role changed, but so too had his workload:

It's obviously more work from my perspective in terms of responsibilities. In terms of the scope of work that you have to do, it's more project management [where you] have all of the tasks assigned to different people. There's up front work in terms of planning the scope of the course, how the content is going to be structured, how you're going to organize the content, what your templates are going to look like, how the course is going to be laid out. But it's more, there's a lot more management in terms of managing time lines, following up and having meetings and making sure that people are getting materials in. It has a lot to do with managing people as well as actually designing learning activities and designing the course.

Overall, Stephen's experiences as an instructional designer have been quite positive but if he could have changed anything about these experiences to make them more rewarding, it would have been his instructional design decisions. If he had known then what he knows now, because of more experience and learning, he would have organized the

courses differently, integrated activities differently, and approached the course development process differently.

The Case of Katrina

Katrina works as a Senior Instructional Design Specialist at a distance education unit of a major Atlantic Canadian university. Katrina is fairly new to the instructional design field, having worked in her current job for eight months. Prior to this position, Katrina worked at a telecommunications company whereby she developed and conducted in-house training for customer support staff and sales associates. While in this position, Katrina performed some instructional design duties as she worked with in-house subject matter experts to develop Web-based and instructor-led training programs.

While Katrina is a newcomer to the instructional design field, she has been involved in the delivery of WBL for seven years. For the first three years, Katrina helped instructors and students in the education faculty ready their material for online delivery. In this role, Katrina assisted faculty in uploading their course outlines and readings to the Web and provided assistance with using WebCT™ communication tools. She also helped education students develop multimedia projects using various presentation/authorware software. Not only has Katrina played an important role in the design and development of WBL, but she has taught university courses that focus on integrating technology into the K-12 classroom.

Katrina graduated in 1997 with a Master of Education degree in the area of Learning Resources and Technology. Katrina feels that some of the courses in this degree program

helped prepare her for the instructional design profession. For example, one course provided an opportunity to build a Web site while another taught how to build an interactive multimedia project using Toolbook authoring software. In addition, Katrina holds an adult learning degree which has enabled her to design with the learner in mind:

...we're developing curriculum for adult learners rather than for primary and elementary kids so I think having a background in adult learning has been an asset when looking at ways of presenting material.

Katrina chose to work as a designer of WBL because of her background in curriculum and her interest in emerging technologies. In the following excerpt, Katrina describes how she came to enter the instructional design field:

I've been involved in curriculum writing for about ten years so it's just an expansion of that really. The other thing is that you want to keep up to date in software and technology and you can't do that if you're not doing some design...

Work Environment

The distance education unit where Katrina works employs approximately 80 staff members who help design, develop and deliver print and Web-based course materials; produce video components and create graphics and animations; offer WebCT™ support and training; and offer support to distance education students. Four instructional designers work at this unit, three of whom hold the title of senior. As part of their duties, all designers are involved in course development with the senior instructional designers also responsible for external projects and research activities.

During the course development process, a fixed team consisting of an instructional designer, video producer and publications specialist works with a content expert to ready his or her course for Web delivery. The instructional designer acts as project manager of this course development team. The publication specialist, who works very closely with the instructional designer, converts new course content into HTML for Web delivery and makes revisions to courses already in existence. The video producer or other team members such as graphic artists and copyright officers are actively involved when their individual expertise is required. Katrina feels that having fixed team members positively impacts the course development process. Because instructional designers manage the publication specialists' workloads, they can easily determine if time and resources are available to take on new course developments or external projects, or move existing course materials online. Katrina feels, however, if a video producer were not part of this fixed team then it "wouldn't be a problem...[as] the video component is only a small component of the course, and we only require dedicated time from a producer for a certain number of weeks." However, Katrina would like to see a graphic artist become part of her fixed course development team. This would allow her to quickly assess what graphics resources were available.

Katrina regularly consults with her team members, other instructional designers, support personnel and management during the course development process. For example, she often asks other designers for their advice or input on design/development issues. She may also consult with technical support personnel on such issues as bandwidth and file compression.

Katrina stressed that, during the course development process, “graphics software and graphics resources are seldom available.” When this is the case, she would like instructional designers and/or publication specialists to have the capability (training and software) to fill this role (i.e., create and edit graphics and animations). She also notes “graphics design staff should receive training on new technologies and be familiar with WebCT. They then would be able to better assist in the development process.”

Since beginning work in her current position, Katrina has not been provided an opportunity to attend professional development workshops or conferences. Katrina feels strongly that regular professional development opportunities are needed in her field of work, especially as Web-based technologies are continuously changing. She also stresses the need for these opportunities to allow her to communicate with, and learn from, other instructional designers in the field. In the following excerpt, Katrina voices the importance of professional development opportunities:

Like any job, professional development is important. For example,...we should all go to WebCT training courses and seminars. It gives us a chance to meet and learn from other instructional designers.

Roles and Responsibilities

Katrina’s main responsibilities include designing credit/non-credit courses for Web-based delivery, project managing the development and delivery of these courses and designing and project managing external projects. A typical workday for Katrina involves reading, organizing, storyboarding, and partially coding course content. She also regularly

meets with team members to monitor the development of each course component and to ensure production time lines are met. At Katrina's workplace, the use of an online database helps track and manage course development.

When assigned a new course, Katrina first meets with the content expert(s) to discuss the course development process and provide tips on how to write and organize content for the Web. A video producer also attends this meeting to help encourage faculty to incorporate video into their course. Inviting a video producer to this initial meeting is new. In the past, a video producer was only brought in on the request of the content expert. Katrina describes the advantages of including a video producer early on in the course development process in the following excerpt:

The other thing that we do that seems to be working is that the video producer sits in on the first meeting with the faculty person. The video producer I am working with has shot a number of videos for the health care system. As a result, he can immediately think of video clips that we can use.

The second step of the development process involves the delivery of course content by the content expert to the instructional designer. Once it is received, either all or in part, Katrina reads through the material "from the adult learner's point of view and looks at where you can incorporate video, audio, and imagery that will enhance the text or supplement it somehow." Katrina feels that reading the content is an important role of the instructional designer, as she explains:

As an instructional designer, I think it is important to go through the material. You have to get a sense of the subject and how to organize it for the Web. Most of the material that comes in from content experts is well organized, but it is written like a textbook, a correspondence course.

After reviewing and editing the course content, Katrina designs and codes the syllabus and first module within WebCT™ for the content expert to review. Katrina feels that being able to code for the Web is an important skill that an instructional designer should possess.

For new course development, I think that an instructional designer has to develop and code certain parts of that course to get a feel for what it is actually going to look like on the Web. I think we have to provide a format for [the Publications Specialists] to follow.

Throughout the course development process, Katrina and the content expert explore ways of incorporating multimedia into the course and then other team members are brought in as their expertise is required.

Katrina's project management role involves regular meetings with team members to discuss their progress on a course component to ensure all components are completed on time and as required. Katrina signs off on a course when all course components are completed and the course is ready for delivery. In the following excerpt, Katrina describes her project management role:

[I ensure] all copyright is cleared, videos are shipped/uploaded, graphics are inserted, and the course is uploaded, all links are tested, and the content expert has been paid.

As a senior instructional designer in her distance education unit, Katrina is asked to take on external projects. Katrina enjoys this aspect of her job finding external projects very 'interesting' because she "sees them from beginning to end." When working on external projects, Katrina first meets with the client(s) to "identify what they actually want and help define the objectives and topics that are to be covered." Two major challenges that Katrina

faces when working on external projects are staying within development time frames and budgets and determining content. This challenge does not arise with university Web-based courses, explains Katrina, as the faculty member has most often taught the course before and has decided the content to include. Another difference in her role is that, unlike course development, Katrina does not code content for external projects:

When I'm doing outside contracts, I paper storyboard. I don't code anything. Most of the time, the course is developed using a different software such as Flash. We have assigned someone to this task full time.

Thus, Katrina feels that both her instructional design and project management skills are utilized more with external projects and her technical skills less.

When Katrina is not project managing or performing instructional design duties, she is engaging in research activities and committee work. For example, at the moment Katrina is conducting research on online examinations as an instructor wishes to make use of this new form of assessment in her Web-based course. Some of the questions that Katrina is seeking answers to include:

How effective are online exams? Are they equivalent to open book exams or can we compare them to invigilated exams? Will the grades be skewed or will they be comparable to traditional style exams? How do students feel about online exams?

As part of her role, Katrina also offers support and training to instructors on online teaching practices and Web-based technologies such as WebCT™. This support and training can be just-in-time or in the form of a formal workshop or training session.

To carry out these roles and responsibilities, Katrina works Monday-Friday, 9:00 a.m.-5:00 p.m., either in the office or at home. Flex time is available and Katrina takes

advantage of this option when she is teaching on-campus or attending to family responsibilities. Hours taken are then made up during the evenings and weekends. If she has a lot of reading to do, Katrina chooses to work from home as there are fewer interruptions there. However, she prefers to stay within regular working hours as much as possible so that team members can easily reach her. Katrina feels if a course or project is not going to be ready by its delivery date, then she would work the extra hours to ensure it is ready. When Katrina is off sick, nobody picks up her workload. However, this is not as much of an issue when she takes vacation leave as a new course is usually designed far enough in advance that it can be managed by a publication specialist or another instructional designer. The maintenance of existing courses and faculty training and support can also be handed off in her absence.

Successes and Challenges

Katrina has experienced many successes and challenges in designing for WBL. For example, in a previous position she successfully project managed, designed and developed a training initiative for a new product launch. The training was delivered synchronously online to staff located worldwide. In her current position, Katrina is proud of the fact that she has designed and developed two Web-based courses with limited resources and within limited time frames. Katrina noted that unrealistic time frames are particularly challenging, as she describes in the following excerpt:

I don't think that you can do a really good job incorporating multimedia if the time is not there. There should be at least a six-month time frame [to receive and review content], then a semester to put it into the multimedia format. This is why a lot of our courses are mainly text.

Also, Katrina acknowledged obtaining course materials from content experts in a timely fashion and acquiring knowledge of a number of subject disciplines to be challenging.

Reflections

To be successful as an instructional designer, Katrina feels that one must be creative, possess good communication, time management and team management skills, be able to multitask, get along well with others and respect others' expertise. She feels that most, if not all, of these qualities are innate and cannot be learned. An adult learning background is also needed, adds Katrina.

In the last few years, Katrina's experiences in designing for WBL have changed "from the old way of moving text to the Web to looking at different ways of representing text visually. And of course, software, it's always forcing you to change." If Katrina could change anything about her experiences as an instructional designer, it would be that she would have engaged in more professional development opportunities. In the following excerpt, Katrina stresses the need for these opportunities:

Most instructional designers come from adult learning backgrounds or curriculum development, have teaching backgrounds or have been with a publishing company...but more professional development in [other] areas is needed... Just getting out and talking with other instructional designers and [engaging in] professional development is the key.

Another reason why Katrina feels engaging in professional development opportunities is important is that the instructional designer's role is different in every institution/organization and thus it is important for instructional designers to communicate

and collaborate with one another so that they may better understand the diversity of the profession. Katrina describes the different roles expected of instructional designers:

In industry, they want you to be a trainer, they want you to design material, they want you to do performance reviews. Here, they want you to maintain courses, work with faculty, do research and instructional design. Other industries, they want you to be a graphic designer; here as well they want you to be a project manager, a team leader.

The Case of John

John is employed as an Instructor and Instructional Designer at one of Canada's leading fisheries and marine transportation educational institutions. He has worked in this position for four years. Prior to this, John worked as an Assistant Manager of Course Production in the distance education unit of the university. In this position, he oversaw the development and production of correspondence and Web-based courses, ensuring they were ready by their delivery date. This role also involved managing a group of course production people including instructional designers and publication specialists. In this position, John also performed instructional design duties but at a macro level whereby he consulted with or advised other designers.

John has worked in the instructional design field for 10 years and has been designing for the Web for nine years. Prior to the delivery of courses via the Web, John designed distance courses for correspondence delivery. John notes that he did not just stop developing for correspondence or print-based delivery and then begin strictly developing for the Web; it was an evolution. John attributes this move to WBL to the progressive thinking of his Masters supervisor: "even though she wasn't a technical person, she was always looking for

teaching and learning aids.” At the time, John, his supervisor and others in the education department were investigating the Web as a medium for course delivery. John’s technical capabilities and knowledge, coupled with the faculty’s theory-based reasoning, provided the means for the department to incorporate computer-mediated communication into their correspondence courses. After that, they moved to computer-assisted instruction in the form of tutorials. Both pilots were a success as the feedback from students was quite positive.

John holds a Master of Education degree in Educational Technology. He feels that this degree, coupled with his supervisor’s support, had led him to pursue a career in instructional design. Although he did not realize it at the time and did not fully understand what instructional design was, John had always looked at things from an instructional design perspective. For example, when approaching new content to be learned, he would prefer it to be organized in chunks and would often draw diagrams to illustrate textual content. Because of John’s interest in instructional design, his supervisor created special topics courses in this area in his Masters program “that were pretty deep, involving research into the theory of educational technology, teaching and learning, learning styles...; that theory made me a little more thoughtful in terms of how I would approach organizing content.”

Work Environment

The institution in which John works is recognized both nationally and internationally as a leader in the development and delivery of its on-campus training programs. The institution has also developed, and currently offers, a wide range of courses at the degree and certification levels being delivered to students utilizing various e-learning environments.

The majority of these courses have been developed in co-operation with local multimedia and technology firms. On October 31st, 2001, the institution was recommended for registration of its Quality System to the ISO 9001: 1994 standard. John feels that the implementation of this standard “has positively impacted the process and product because procedures are continuously being documented, followed and evaluated or audited.” The biggest plus, according to John, is that “it’s written up very clearly what you do and what the group does and how the process works.”

Three other instructional designers work alongside John performing similar teaching/instructional design duties, with one performing more of a student support role and less of an instructor/instructional design role. At the institution where John works, collaborating as part of a team is the norm. During the program/course development process, John may work/collaborate with the project manager, content expert(s), graphic artist, Web developer, multimedia producer, librarian, programmer(s), copyright officer and research assistant(s). Sometimes an industry and/or student representative may be brought in at the onset as part of the development team to gain their perspective(s). John feels that this multi-stakeholder development process “works really well in terms of ensuring that you achieve what you set out to achieve and also that what you are trying to develop is going to work; you’re getting this feedback right from the start.” Some of the other team members (e.g. graphic artists, Web developers) may or may not be brought in at the onset but John feels that bringing team members in early allows them perspectives which may provide further insight later on.

John regularly consults with these team members during the course development process. For example, he often consults with programmers, graphic artists and Web developers during the instructional design phase to determine what is possible in terms of development. John also often asks his instructional design colleagues for their advice or feedback, whereby they might even critique a prototype. Towards the end of a product's development, John may call in other team members for their feedback as well, particularly students.

At John's workplace, technological resources are "typically available" during course development but "there are exceptions based on financial limitations." In situations where cost is an issue, attempts are usually made to find/utilize a suitable substitution. For example, John may wish to incorporate a real time communications tool such as teleconferencing in a course but cannot do so due of the high cost involved. John and his manager and/or director would then seek an alternative such as WebCT™'s Chat.

John typically attends one national or international professional development workshop or conference per year. Some years he feels one is adequate. Other years, he would like to participate in additional opportunities but cannot do so due to the high cost. When someone at his workplace attends a conference or workshop, it is expected that they describe their experience and distribute resources when they return. There is no limit to the number of local workshops and conferences that John can attend, unless they are very expensive, as his director and the institution in which he works fully support professional development opportunities.

Because John's place of work is certified by ISO (International Organization for Standardization), constant feedback loops have been integrated into the system to allow students to provide feedback. This quality assurance process dictates that comments received be first reviewed by the quality office which then documents these comments and directs them to the appropriate department, unit or individual. The office then checks on whether the comments have been received, whether they have been dealt with and/or resolved, and whether responses have been sent back to the senders. Then, at the unit's regular meetings and regular manager forums, current student feedback is discussed so that everyone is informed. John finds that "...these ISO procedures have made it so that things have to be dealt with, nothing goes unnoticed and so the communications loop assures that there's feedback and it will be two-way unless it's an anonymous thing." He believes that having this type of open communication environment is a plus because students "realize that if they speak up they will be listened to, they have a voice and somebody will be acting or speaking with them about the issue." John feels that even though this feedback loop is a very broad tool, "it's still a way to evaluate learning and the delivery of courses and programs."

Roles and Responsibilities

In his current position, John's main responsibilities include the following: acting as "project lead" in coordinating the development of undergraduate, graduate, and certificate courseware utilizing multimedia technology, including the World Wide Web; and working as part of a design team comprised of content experts, media and technology experts, instructors, and external resource personnel to plan, organize, and coordinate the

instructional design, development/production, and evaluation of learner-centered instruction utilizing the latest instructional media for distance delivery. Currently, John is not engaged in course development as he is teaching 100% of the time. But when John is developing a course or project and in the instructional design phase, he is in his office “with the door closed hovering over piles of content trying to make sense of it, organizing it and sketching out illustrations, tables or graphics, [and] looking for resources online.” However, when in the development phase, John spends approximately 80% of his time communicating with the various team members (content expert(s), copyright officer, Web developer, programmer, etc.) to determine if the pieces and the overall project are moving along as intended.

John no longer refers to himself as project manager during the course development process but instead refers to his role as ‘project lead,’ the difference being that a project manager truly manages the project, which involves managing budgets, human resources, etc. and he’s “not involved to that level..., [his] responsibility is much less.” As project lead, John monitors a project’s progress and communicates this progress to the project manager along with pressing issues (administrative, budgetary, human resource, procurement, quality assurance) and identified risks. In the following excerpt, John distinguishes between the roles of project manager and project lead:

As project lead, I realized rather quickly that I had limited control and that was frustrating. The control was supposed to be the project manager’s role... and maybe that person isn’t doing that job properly or... maybe the faculty person that you are working with has more freedom and you really can’t tell them what to do. Maybe there’s no money in the budget to hire on additional people to deal with the workload.

Another area in which John works that he enjoys is that of program development. John is involved in program development from the onset, when “they’re looking at

developing an entirely new program... from the idea to the concept phase right up to mapping out the outcomes for the program.” John admits that, with program development, everything is on a much larger scale than with course development in that “you start looking at the particular areas of interest or importance within the program and out of that come courses and then from there, you start doing the curriculum development for the courses.” This program mindset helps ensure that “every course in the program is consistent” and “the theme of the program is maintained.” For some programs, the desired outcomes may not be considered topics or content areas within courses; however “you’re achieving them in the ways that you are delivering the courses.” When engaged in program development, instead of working with just one faculty member, John works simultaneously with all faculty members teaching the core courses within a program, with these faculty members “...well aware of what the objectives of the program are..., what the overall outcome of the program is and how they should be tying everything together.” John finds student feedback much more positive in courses that were designed using the program approach. John describes the benefits of designing programs versus stand-alone courses:

From an instructional designer’s perspective, I really like it because you see how all the pieces fit together, you see the big picture which is what it should be. Your students are signing up for a program usually. They’re not signing up for a course.

Once the curriculum has been mapped out for a program and/or course, as an instructional designer, John’s role is to organize the course content, determining how it may best be delivered based on the course objectives and knowledge of the learner and program, looking at the best delivery structure in global educational technologies and methods of teaching and learning. Part of John’s instructional design role also involves reading,

reviewing and copyediting the course content during which he reads for clarity, chunking and organizing the material for online delivery and incorporating tables or diagrams as needed to help illustrate key concepts or points.

Once the course material is reviewed and edited, and in some cases storyboarded, it is then passed on to the respective team member(s) for development. In this phase, the instructional designer's role is more one of "monitoring and quality assurance or reviewing the product at various stages to see if it is doing what you had originally planned it to do," still calling on the curriculum developer and content expert to see whether it is in line with what their original plans were. Another responsibility of John's is to ensure copyright materials are cleared before they are included as part of a course.

A responsibility that John has not had in previous positions that he has now and for which he has formal training, is that of performing program evaluations. This role involves assessing whether programs (and sometimes courses) "are achieving what they're supposed to be achieving," determining "what needs to be changed in order to keep them up to date [if] they are out of date," analyzing feedback from instructors and students, determining "what they are saying about the courses, what works, what doesn't work," and then making changes to the program or course accordingly. John enjoys this aspect of his job, finding in his previous positions that "no one seemed to care after the [course] was built whether it was working or not, or if revisions or a review were done; it would be done just by the content expert..., it was not opened up to a multi-stakeholder review."

John also conducts faculty training as part of his instructional design role. For example, if faculty wish to learn more about WebCT™, about facilitating discussions within

WebCT™ or delivering course content via PowerPoint™, John provides either one-on-one instruction or conducts a formal faculty development workshop on the topic.

Because instructional designers are classified as faculty members at John's place of work, they may be called on to teach in subject areas in which they have an educational background. If instructional designers are assigned teaching duties, then their instructional design workload is adjusted accordingly. Currently John is teaching 100% of the time. In his position as instructor/instructional designer, John may also be called on to promote and/or 'sell' programs to potential clients.

For some courses, John may also adopt the role of curriculum designer at the onset of the course development process to determine course goals, outline general and specific outcomes for the course, map out these learning objectives and then build or tie in course content. During the development phase, John may also perform HTML coding duties if the human resources are not readily available, but he fills this role much less frequently in his current position as the practice is frowned upon in a unionized environment.

To carry out these roles and responsibilities, John works regular weekday hours with approximately five hours per week spent working out of the office. These extra hours make up for flex time taken during regular workday hours, as John elaborates:

I don't feel as if my work load is too great to accomplish in the hours that are set out to me by administration; however because I choose to prioritize things outside work probably higher, I'm working outside regular office hours to achieve the outcomes that I am responsible for.

If John has to work overtime on a project or course, it is usually during the organization phase when he is reading, reviewing, or editing the content. If John can prove that this overtime is needed to meet a deadline, then he is duly compensated. If John is off

sick, he may choose to either work at home, catch up when he returns or ask another instructional designer to step in. Even though he is very comfortable with the latter, he is wary of asking another designer to take on his workload:

I must say that because of the community of instructional design people [here], their individual personalities, it's usually not an issue, we'd do that for each other... Our workloads are manageable enough so that someone could actually pick up and handle it. Sometimes I'm wary of doing that just because they've got to get up to speed with what I'm doing.

As a faculty member, John is off with pay during the summer months. If a project is assigned during this time, he would have to work and take his holidays at another time.

Successes and Challenges

John has experienced many successes and challenges in designing for WBL at the post-secondary level. Because John has overcome many of the challenges presented to him in his instructional design career, he would label those as successes as well. One such success/challenge was the design of Web-based courses for international delivery. In the following excerpt, John describes how designing for international students is different from designing for traditional students:

This is very different than designing for traditional learners for correspondence courses in Canada. Now we're talking about learners in Southeast Asia, Iceland, Ireland, all over the globe...; when you talk about the world and culture, the way that people learn and the way that they interact, changes the way you design....

John describes his experiences in designing for international students as successes because he is proud of the end products but also as challenges because "you really have to

put your thinking cap on” and start considering such things as how different cultures respond to querying the instructor and the technologies available in these international countries.

Another experience that John describes as both a success and challenge is working within accelerated time frames. The institution in which John works is very responsive to both industry and government in terms of creating just-in-time training programs and courses. These products are usually developed within accelerated time frames and John feels meeting these deadlines helps make the experiences successful where “everyone is usually on side.”

According to John, working with difficult team members can prove to be a challenge and “being able to produce with [these] people” can, in turn, make the experience a success. John attributes difficulties in working with other team members to power struggles, communication breakdowns, or personal experiences. There are multiple ways of dealing with these trying relationships, says John, you can “change your approach, your working style to maybe accept more responsibility than you normally would, to maybe do things more formally than you normally would... push for more financial compensation... it is always case-specific.”

Another of John’s challenges as an instructional designer has been successfully “selling” online assessment as a viable option. If the majority of learning is taking place through the computer, John wonders why exams are still invigilated and not completed online. In the following excerpt, John describes his experiences in ‘selling’ online assessment:

People are normally against [online assessment] but there are all kinds of options... so selling that is a challenge and I’ve had some good successes

convincing people that you can do it that way. And that may still be the submission of papers online but the course itself, the learner, and the objectives has lent itself better to a different form of assessment and I've been able to sell these different forms of assessment.

Another challenge that John faces as an instructional designer is accomplishing a project's goals when resources (human and financial) are limited. John describes how a project can be successful despite limited resources:

You might not have the finances to do the ultimate project but you may be able to do it, it may be not as grandiose. You don't have as wild animations as you would have hoped..., but when you sit back and look at it and talk to the learners and to the instructor, after the course has been delivered and it's achieved its objectives quite well, you're thinking that maybe you didn't need all of that...; whereas it would have been nice to have, it was not required.

As an instructional designer, John is very proud of his involvement in program development. Prior to his current position, John had never had the opportunity to design programs and develop courses to meet these program's objectives. He would categorize his involvement in this area of instructional design and curriculum development as a huge success.

While there are challenges on the job that John has overcome, there are still others that he struggles with every day. One such challenge is project management or lack thereof, says John, because "there's expectations of you as a project lead to be a project manager when really you're not." John feels that from an administrative perspective, there is no understanding of project management or what an instructional designer's role is in terms of project management. He believes his role is more that of project lead, but in terms of accountability, he is viewed by his development team as the project manager with all the power. However, he would like to wear the hat of project manager, who has the power to

negotiate deadlines, reroute funds and locate human resources. John feels that projects would run much more smoothly if the actual project manager was responsible for fewer projects, was directly and intricately involved in the project that he or she was managing and had a better understanding of project management.

Another challenge that John faces is the ‘selling’ of hybrid courses, courses with face-to-face and online components (i.e. blended learning), as a viable option. He finds this difficult because most people think a course should be offered either face-to-face or online and do not see the merits of delivering a course via both media. John also finds it difficult to design “flexible” learning strategies without granting the learner complete freedom. For example, because students choose these flexible learning environments, many feel they can submit assignments whenever they like, with no formal due date. As an instructor and instructional designer, John tries to build this flexibility into his online courses yet provide formal due dates as he feels “the learner has to be responsible to deliver something in a timely fashion.”

Another of John’s challenges as an instructional designer involves incorporating “real-time” activities into his online courses. Because their courses are offered to students worldwide, getting students in different time zones to communicate synchronously is difficult. A work-around is to set up multiple chat sessions, with students in the same geographical area sharing a session. John describes his frustrations with synchronous communication tools:

I find it a challenge because there are times when we are developing a course or a program when real time seems to be the best technique to deliver something and you can’t achieve it. Even with some of the real time online tools, we still haven’t settled on one.

Yet another task that John finds challenging is designing for truly “flexible” learning (including industry response) within a very “traditional” educational environment and culture. For example, a corporation may want its employees to complete an online course in eight weeks instead of thirteen or may wish to modify a course’s traditional start date. John believes that many of their target groups would better appreciate this “flexible” learning approach for multiple reasons such as “they might get their staff trained faster, [or] it may be the cost issue.”

Reflections

John sees instructional design as both an art and a science, the process or recipe that you follow being the scientific part that you can learn, and the artistic part being when you go beyond the routine or recipe, designing to truly engage the learner. In the following excerpt, John describes the artistic/creative part of instructional design:

It’s almost like acting, some people talk about teaching in that you’re an actor on a stage in front of your class and you’re trying to make the material interesting and trying to keep their attention, well that’s kind of the art of teaching. Instructional design isn’t really that different. You’re still trying to figure out how you’re going to capture the interest, how you’re going to deliver this to make it interesting, to make it entertaining, make the whole overall experience seem worthwhile to the learner. That’s the art.

John feels that an effective instructional designer is someone who is personable, creative, social, an analytical thinker, a leader but not in a traditional way, and a team player with leadership capabilities. John places these qualities higher than their educational counterparts as he feels he can teach anybody the science: “that’s how the trades were always

learned. The art part is the hard part to acquire; I can usually see that in people, which is actually more important.”

John believes that his instructional design role has changed as a result of the move from correspondence to Web-based delivery. Because of his background in educational technology, John had to ‘sell’ this new delivery medium to his course development team and also help them develop for WBL. Thus, he at first took a more hands-on approach in readying courses for online delivery:

I would have to either teach someone how to do it if they were genuinely interested and maybe 25% would say show me Toolbook so I would then be offering tutorials in Toolbook to several faculty members. So I’d be teaching these people the technology and the software and if I wasn’t doing that... [then] I would be coding in Toolbook and doing storyboarding so I would be much less theoretical and consultative and more hands-on.

Upon reflecting, John admits that he also had “a fairly significant hands-on role” when developing correspondence courses in terms of performing desktop publishing and formatting duties when the content expert either didn’t have the time or didn’t have enough knowledge of the technology. The organization of content had also always been part of John’s instructional design role, even when he was developing correspondence-based courses. Thus, John has realized that the move to online learning has not changed his instructional design role at all. But what has changed are the resources (technological and human) required for course development:

...as the demand for my services grew and/or the demand for distance education development, so did the resources available to me and I was able to pass off this work. And then it might have depended on workload, if I had a bag load of courses to do and they weren’t available, then I might find myself formatting.

The same holds true for the designing of WBL today:

...if I'm working on multiple courses or multiple projects and I use up my coding resources, so what do you do, you end up doing it yourself, which was acceptable if you were only doing one or two [courses] and it wasn't interfering with the instructional design work and the [team] communications... that was common in the early days (10 yrs. ago) and just as common as it is today. It's just that the technologies have changed.

John describes his experiences as an instructional designer as fun, educational, stressful, profitable, and social in that he gets to work as part of a team. He especially likes it when a project moves out of the instructional design phase and into the development phase as it allows him to communicate more with others. From designing courses in different content areas, John has gained a considerable amount of subject matter knowledge. Overall, he would describe his instructional design experiences as cyclic, as he explains:

I'm thinking back to when I started. It evolved to be more work for the instructional designer but then resources were made available. Then as new technologies came in, you became more involved in doing the work and then somehow the resources became available, and you were able to pass off this work.

John now feels that he has reached that peak again where "you have no resources but there's no rescue coming right now." In light of this, he believes that an effective instructional designer should "fuel the adoption of newer technologies or ways of approaching things" and then once the new technology or process is implemented, pass the responsibility on to another team member. However, John doesn't feel that this is happening now as instructional designers' workloads are "to the max."

If John could have changed anything about his experiences as an instructional designer, he would have worked in industry a little more "just to see and get a different perspective on things" and begun teaching earlier. Prior to his teaching role, John questioned why some aspects of courses were not working for instructors and students. Then once he

started teaching, “it shone a whole new light” on how he developed because he realized that a lot of the theory didn’t work in practice. John believes that, in order to design effectively for WBL, one must have taught online or at least been a student online. He explains his reasoning in the following excerpt:

I think I could have come up with even cooler ideas or ways around things if I had been exposed to the real world sooner and actually if I was hiring an instructional designer now, I’d be looking for that.

The Case of Denise

Denise works as an Instructional Design Specialist in the Instructional Development Office of one of Atlantic Canada’s largest universities. Denise has worked in this position for five years. Prior to this, Denise worked as a graphic artist whereby she prepared promotional materials for her distance education unit and for other units within the university. In her previous position she also designed and developed distance education materials (e.g. graphics, manuals, Web sites) and designed sets and produced PowerPoint™ presentations for video shoots.

In one aspect or another, Denise has been involved in WBL from its onset. She helped develop the university’s first Web-based course in 1994, during which time she wore many hats including that of instructional designer. Denise describes her first experience in designing for WBL:

I wore many hats. At that time, other than the subject matter expert, the only other team member that we had was a graphic artist whom I could rely on for help in that area but I did the instructional design, coding, student support, and faculty support. I created all of the accounts. Basically, anything that wasn’t creating original graphics and that didn’t fall into the realm of the subject matter expert, I took care of, in the design phase, delivery phase and

testing phase... The subject matter expert and I designed a survey and then I analyzed the results. I actually gave a couple of presentations on it too as it was [the university's] first Web-based course.

Denise holds a college diploma in Design Arts. She feels that, during the instructional design phase, this educational background helps her to “appropriately design visual elements for learning” which she explains: “I think I can judge whether or not a graphic, an illustration, or a photograph delivers the intended message - whether or not it’s appropriate. I have that kind of design sense and can evaluate visual information.” Denise feels that this educational background has also helped her to interact effectively with subject matter experts and other team members. However, it was limited in providing her with instructional design knowledge, says Denise, adding that she had attained most of this knowledge on the job and through the completion of an intensive two-month instructional design course.

Work Environment

The distance education unit where Denise works employs approximately eighty people, four of whom work in its Instructional Development Office. While the unit’s main services include the development, delivery, administration, and support of distance education courses, the Instructional Development Office’s main services relate to the support and enhancement of teaching practice within the university. The Office engages in such activities as: providing professional development seminars and workshops for faculty members and graduate students; maintaining a teaching and learning resource centre; providing individual and group consultation on teaching challenges; serving on faculty and university committees

related to teaching and learning; and providing instructional design and project management services for teaching initiatives.

The university employs seven instructional designers, five of them in the distance education unit, three Senior Instructional Design Specialists and two Instructional Design Specialists. These positions are quite similar in their functions; the only differences is that senior instructional designers engage in more research-based activities and international projects.

During the development process, Denise works as part of a team which includes a subject matter expert, and as needed, a graphic artist, video producer, copyright officer, publications specialist and student support specialist. Denise regularly consults with these team members, along with her manager and the teaching consultant at the Instructional Development Office, soliciting their input and advice during the design and development phases. The following excerpt provides examples of when Denise would consult others:

...if I'm meeting a group during the assessment phase of the instructional design process and I'm designing a workshop or some kind of interaction with them, I might go to my manager who is skilled in teaching methodologies and ask her to suggest an ice-breaking activity that I might use... Lots of times when using WebCT or computer-based technologies, I'll ask other instructional designers about their experiences. 'Have you ever used calculated columns in the WebCT gradebook?' 'Can you show me what you've done?' Then I can learn from that about how to apply that in the work that I'm doing. Very often I may consult with the publications specialist about copyright material, 'What do you do in this case?' 'How much of this can we use?' 'What is the process for getting permission to use something?' If we're designing a video, then obviously if I'm writing the script, I would consult with video producers and ask their feedback about whether or not something is going to communicate in video. When it comes to trying to distribute information or publicize something across campus, I rely on the experience of our senior clerk, 'Who to contact for what?' 'How do I distribute this?' 'What needs to go to the mail room?' 'What kind of instructions do I need to

give them?’ There’s lots of people around whom I consult with or get advice daily.

Denise finds that needed technology is readily available during the course development process as she explains: “I have not yet encountered an instance when technology I needed was not available. Computer hardware and software and video recording equipment is readily available within [the distance unit where I work].”

To build on her knowledge in teaching/learning, technology and instructional design, Denise regularly attends the Society for Teaching and Learning in Higher Education (STLHE) annual conference and participates in local workshops on new technologies and new media, specifically on designing learning opportunities using those technologies and media. Even though Denise finds these conferences and workshops informative, she believes that more professional development opportunities are needed, including regular meetings with other instructional designers to share their experiences with one another. In the following excerpt, Denise explains the importance of instructional designers engaging in these professional development opportunities:

I think that the STLHE conference, which for the four past years I’ve been attending on an annual basis, is a very good conference and I learn a lot from that. Other opportunities might include locally given workshops or conferences. I think that those opportunities could be increased. Three or four of these types of opportunities per year always keeps you in the learning mode and I think what might help is getting instructional designers together to share experiences and talk about challenges. I think that we can learn a lot from each other and in the recent past, those opportunities haven’t existed.

Roles and Responsibilities

As part of her job, Denise engages in instructional design, consulting work and project management and provides training in the use of educational technology and other teaching-related skills and topics. During a typical day on the job, Denise spends 20% of her time communicating and consulting with others, 60% working at her desk and 20% attending meetings. In the following excerpt, Denise describes her typical workday:

I always check voice mail and e-mail and they could be related to meetings that we want to set with regards to either initiating a project or ongoing work on a project or consultation or help with something. I'm probably meeting a couple of times a day on a particular project whether it's a working type of meeting or a planning meeting. I'm often asked to sit on committees; I might have a committee meeting once a week or once every two weeks. I would say about 60% of my day is my own work, things that I need to accomplish on my own, either I need to read something or I need to develop something or I need to work on the design of something, I need to prepare a presentation, I need to review content, do that copy editing stuff... My day is 20% meetings, 60% doing my own work and the other 20% phone calls, consulting individuals, with colleagues or with my manager.

Denise's instructional design role involves performing an audience assessment; determining their learning needs; writing learning objectives; designing learning experiences, resources and activities; supporting instructors during the delivery phase; and designing instruments to evaluate the success of learning experiences. As a designer, a large portion of Denise's time is spent reading, editing, organizing and storyboarding material submitted by content experts to be passed on to other team members for development.

As part of her role, Denise also provides consultations on program and course design:

As an instructional designer here in the Instructional Development Office, there is a lot of one-on-one or small group consultations related to the development of a new course, setting course objectives and designing learning activities and evaluation schemes. Instructional design comes in here but it would be in situations where I would sit down one-on-one with the

course instructor. Very often I get involved in learning opportunities that are not university credit courses such as the Graduate Program in Teaching (GPT), the Graduate Research Integrity Program (GRIP) and tutorials that the library offers.

In addition to program and course design, Denise also provides consultations on teaching practices. For example, with online learning technologies, Denise often guides faculty in their interactions with students:

...the Web really enhances distance or online teaching and learning by the types of interactions that can happen in Web-based conferencing and that's where, I think, a lot of faculty need to rethink their role - not as the expert in delivering content but more of a facilitator role. ...That's where they could use a lot of help, a lot of advice with their teaching practice. When it comes to making the transition from face-to-face teaching to online teaching, new skills are required to effectively moderate an online discussion so that you meet the course goals, discussion is productive and students stay on task.

During the development process, Denise finds that "very often, there is some training needed to educate the course instructor or teaching assistant about use of the technologies that are being used in the course or program." For example, an instructor may not be familiar with Web-based conferencing or may need assistance in navigating through the course Web site. As part of her instructional design role, Denise provides this training to faculty on learning technologies such as the Web, PowerPoint™, HTML coding and WebCT™, and also delivers workshops on the use of the case method, writing learning objectives and designing visual presentations.

In addition to her instructional design role, Denise performs a project management role whereby she leads a project's development team, assigning tasks, determining time lines and communicating them to team members, managing project files and providing progress reports to the project's proponents. Aside from this, she also engages in graphics design,

copy editing, word processing, desktop publishing, and HTML coding particularly when human resources are limited or to meet a deadline. In the following excerpt, Denise justifies her reasons for completing such tasks that are not officially part of her job:

If I don't have coding resources or graphics design resources, because I have skills in that area, I can usually contribute that to a project when I can't avail of a programmer or graphic designer or in cases where, in order to meet a deadline, I can assist a programmer or a graphic artist by completing some of that kind of work.

When designing and developing a course to be delivered online, Denise first meets with the project's proponents (whoever who is primarily responsible or who is requesting her help with the project) to discuss their thoughts and ideas about the origins of the project, why there is a need for the learning experience, the goals of the project and its intended audience. Depending on time frames and/or budgetary issues, Denise may be provided an opportunity to interact with, and perform a needs assessment on the intended audience. For example, when Denise developed a teaching/learning workshop for physics teaching assistants, she first met with them to determine their learning needs. Once these learning needs are determined, the next step in the development process is to write learning objectives that cover these learning needs. In the following excerpt, Denise describes the importance of this step:

...the next step is to formalize and firm up the learning objectives for the project so that before anything else happens, I am really clear on what we are trying to achieve, that it meets the proponent's goals and objectives and the learner's goals and objectives and that everybody who is involved in the project is beginning the project with the same thing in mind.

Next, Denise conducts a review of existing resources (e.g., textbooks, Web sites, videotapes, illustrations, animations, etc.) to determine if any can be used to meet these

learning objectives. In determining suitable resources, Denise refers back to the learning objectives and how these learning objectives were intended to be evaluated so that the objectives, evaluation method, course content and resources all inform each other. Once existing resources are selected, Denise then works with the development team (e.g., content expert, producer/director, publication specialist, computer programming specialist, graphic artist) to produce new resources as needed, e.g., lecture notes, video program(s), Web site. Towards the end of the development process, Denise may be provided an opportunity to engage in a testing and/or evaluation phase. In the following excerpt, Denise describes the importance of these two phases in producing a quality product:

In a couple of projects, we've been fortunate enough to have the luxury of time to run a beta test where we just make sure the thing works and then a pilot test where we can select a small group of people to run through the program, provide feedback and then make revisions as necessary before the first formal offering. I usually keep an eye on the first formal offering and support both the students and the instructor through that process and then there's an evaluation process at the end which is, most often, some sort of a feedback survey. In one project that I've done recently, we actually did a focus group.

To carry out these roles and responsibilities, Denise works Monday - Friday, 9:00 a.m. - 5:00 p.m., with approximately five to ten hours each month spent working at home during off hours to complete work for the following day. Denise explains that she has to work these extra hours "to meet deadlines, [and] to keep everything on track." Denise does not receive financial compensation for these extra hours worked but instead can take time off during the workday for time put in during the evenings and weekends. If Denise feels that a course or project is not going to be ready by its intended due date and if it were work that

she could accomplish, then she would work the extra hours to ensure it is ready. If it is work that another team member is responsible for, then Denise finds that more of a challenge:

If it's not something that I can accomplish, if I'm dependent on other team members, then it's kind of a challenging situation. Either it's the other team member that needs to put in the overtime or if it's very serious and deadlines can't be met through available overtime, then we need to rethink the delivery date or due date or renegotiate those deadlines but in most circumstances, you usually put in a couple of extra hours to ensure that it is ready on time.

As part of her job, Denise travels approximately five times per year. For example, as the university's representative on the Association of Atlantic Universities Instructional Developers' committee, Denise has traveled within the Atlantic provinces three times in the past year. If Denise is off sick for a few days, no one picks up her workload. She has to cancel or reschedule meetings and catch up on her work when she returns to the office. In the following excerpt, Denise explains how impossible it is for another instructional designer to perform her duties while she is off:

With instructional design work, it's a lengthy process and impossible for anybody to kind of step in the middle and take over for a short period of time. It's the same thing if you've been consulting. If you've been working with a faculty member or a group for a period of time, there's a continuity that's there and a relationship that's been built that it's difficult for anyone to step in and take over in a short period of time.

The same holds true for vacation leave, in which case Denise "works towards a down period in [her] work. Everything prior to that is scheduled to accommodate [her] time off."

Successes and Challenges

Denise has encountered many successes and challenges in her instructional design career. One such success was the design and development of a "blended" learning program

in research integrity for graduate students which uses the Web to provide resources, quiz students, and elicit feedback. In the following excerpt, Denise describes the uniqueness of the Graduate Research Integrity Program (GRIP) which helped make it a success.

[The GRIP program] is kind of a unique program... unique in terms of its design. There was a need to educate graduate students on research integrity... we wanted to do a better job than what was currently being done... We wanted to really challenge [the students] to think about [research integrity], to examine their own values and beliefs, to work through case studies of what they might do in an ethical situation. We wanted to provide them with the resources that would help them make decisions on ethical issues as they encounter them in their programs... I think what made it a success was the design of the three part component course, that it's spread over a two month period whereby [graduate students are] only required to devote ten hours to the program but I think it handles the issue of research integrity and accommodates their schedule much better than traditional methods of dealing with this topic in these kinds of environments.

Another of Denise's successes was the design and development of a set of online self-study modules for university students on library research skills. Denise found designing these modules particularly challenging because they were not to be taught or facilitated by an instructor. In the following excerpt, Denise explains why the end product was a success:

The Web site design was very simply laid out, the students could select what module they wanted to do, the module pages were short and chunked into very small pieces. [The Web site] uses cartoons to enhance the interest in it but they're very relevant to the content. It uses screen captures from the various catalogues and periodical indexes that the students have to use, [and] it contains self-tests and exercises. There are a lot of resources built into each module and the student has an experience where they read about it and see the screens and then do it themselves... Each one of [the modules] take about 20-30 minutes to complete and it's completely stand alone. The student can access, complete it and come back to it anytime they want. The whole program is successful in improving students' library research skills.

Another successful product that Denise had helped design and develop was a WebCT™ course that introduces faculty to the capabilities of WebCT™. Denise explains how she made the learning experience a success:

WebCT is a very feature-rich program and very complex for the first time user and what I've done is design a course that employs all of the tools in WebCT and lays them out in a way that can be easily understood by anyone that is new to the program. I have... also built in student assignments... [and] student homepages... I've created 20 dummy student accounts and each one of those students is a member of a group so I've illustrated the way teams can do group work... The feedback that I've gotten from the workshops is always very positive...

Denise is also proud of the two Web-based courses that she developed early in her instructional design career. These courses have stood the test of time and are still, to this day, demonstrated as exemplary online courses.

One thing that Denise has found particularly challenging in her career is designing activities to actively engage students online. Denise explains her frustrations in designing these types of activities:

The added value that online learning brings to the whole teaching and learning situation is that it provides opportunities at a distance for students to interact with each other and for students to interact with the instructor. To determine the nature of those interactions - for what purpose, to meet learning objectives - and then to design activities that take advantage of that ability to interact yet enhance the learning goals and objectives of the course, I find greatly challenging...

Accommodating the lack of student experience with collaborating online and helping faculty and students feel comfortable with online evaluations are two additional challenges that Denise faces when designing for the Web. Denise describes these challenges in the following excerpt:

...for a lot of our clients, interacting online is still very new. They're very busy and I'm finding a lot of students are taking courses because they need the credit and they need the knowledge but that's almost secondary, it's "How can I get through this in the fastest and the easiest possible way?" I think to acknowledge their needs, but again to meet the goals and objectives, to get students to collaborate online, to take some responsibility for their learning, to help them overcome their fear or intimidation of the technology is challenging. So, in addition to designing those activities, it's getting them started, getting them comfortable, and getting them to see the value of this interaction for learning and rethinking evaluation schemes for online learning environments is difficult. I don't believe that we still need to be in the invigilated exam type situation for online learning; there's different technologies there to let us perform certain types of evaluations online... There's a lack of faith amongst the faculty and amongst the students so I think it's challenging to evaluate students online, to come up with assignments, tests or exams that will evaluate their learning in that online environment.

As an instructional designer, Denise also finds working with a number of different disciplines and keeping current with the technology particularly challenging. In the following excerpt, Denise explains why instructional designers always need to be learning:

...while you're actually working in a number of different areas or disciplines from one project to the next, there's a lot of learning about the discipline that goes along with working in that environment. But I think you also have to keep in mind the technology and keep learning new technologies as well and I find that really challenging because you get so wrapped up in projects.

Reflections

To be successful as an instructional designer, Denise feels that one has to be creative, able to solve problems and interact well with others, all of which she considers personal traits. Thus, Denise believes instructional design to be more of an art than a science as she explains:

...whether or not one succeeds in instructional design has a great deal to do with how they interact with others and that's a personal trait, ...how you build

relationships, how you maintain relationships, how you influence people is a personal talent. Your success is also dependent, a great deal, on your ability to solve problems and be creative because every learning need is really a problem or challenge and it's up to the instructional designer to come up with interesting, effective, creative ways to meet that need or challenge and again I think that creativity is very much a personal trait. It's hard to learn to be creative or to think critically about a circumstance or situation, the opportunities, the options. That's why I put it more in the art category.

Denise believes that effective instructional designers also have to be tactful, good listeners, able to communicate well, able to motivate and guide team members, well organized, good managers, creative in coming up with solutions to various learning challenges and confident because of the nature of the people with whom they work. Denise stresses the importance of the subject matter expert - instructional designer relationship that "needs to be handled very tenderly." Denise also feels that an effective instructional designer is someone who is always learning, about new technologies, new research and new subject matter.

Denise finds her instructional design work very interesting and challenging and enjoys working with other people, as she explains:

I'm most happy when I'm collaborating with somebody on something. I think somebody said 'It's not what you do but who you do it with,' that really makes the difference and I find in this job you are provided with an opportunity to interact with people with many different skills and from many different disciplines whether they are academics or professionals in such areas such as graphic arts, video producing, etc.

She adds that working in a team environment can be frustrating as well:

Because you work in a team environment, you can't always pick and choose who you work with so it can be frustrating and you have to deal with that frustration in a positive way. I think that goes back to being able to work with people, being able to work as part of a team.

Overall, Denise feels that her experiences as an instructional designer have changed, mainly because, with experience, her ability to design has improved. Denise explains how she has evolved with experience:

...I've changed and I think it's because, through experience, you develop a style or approach to instructional design problems and also with experience and successes, you become confident about your abilities. So I think that, at first,... because of my background, not having been trained in education or instructional design, ...I might have been a little bit tentative, a little unsure, maybe held back a little bit, and not led the process as much as an instructional designer normally would. But then, with the successes and positive experiences, you learn through the experiences, you learn a process, a way of handling people, about handling the project, that you adapt and change with every new project. In tangible ways, I've developed my style, my way of handling the process and I think that's made it more interesting for me when you have that control and confidence.

If Denise could change anything about her experiences as an instructional designer, it would be that she would have made her institution more aware of the many and varied roles and responsibilities of the instructional designer and sought more financial compensation for her contribution to WBL:

I'm not sure how much I need recognition from my peers or those with whom I work about the kinds of work that I do but it makes a real difference in terms of financial compensation for the work that I do. In terms of my whole experience, if the institution - right from department, to school, to institution - if they were more aware of the kinds of work that an instructional designer does and their responsibilities, it would have provided me with more financial compensation for the work and more recognition of my skills... then I might have been afforded more opportunities for instructional design projects.

To help make her experiences as an instructional designer more positive, Denise would have communicated more with other designers:

I guess too, more sharing amongst the group of instructional designers, you kind of sometimes feel, I know that I do, that I am working in isolation a lot

of times. More opportunities to get together as a group and share experiences with each other, that would have been helpful.

Summary

Chapter Four presented the five cases, providing a holistic perspective of their experiences in designing for WBL at the post-secondary level. Each case was organized according to the categories of work environment, roles and responsibilities, successes and challenges and the instructional designers' reflections on their experiences and the skills required of an effective designer of WBL.

Beth works as an Instructional Design Specialist in a public, post-secondary college with two other instructional designers and a variety of team members in the development of WBL. She is a relative new comer to the instructional design field but has been involved in WBL for many years. At the college, two of Beth's major responsibilities, aside from instructional design, include deciding on future online course offerings and overseeing the development of courses and projects, i.e. acting as project manager. As part of her job, Beth travels to developing countries on international consulting projects. She has also helped initiate a quality assurance process at her workplace. Beth has experienced numerous successes as an instructional designer attributing many of them to her exposure to a variety of learning opportunities and to support received from her employer. She has also experienced numerous challenges when designing for WBL, some of which include working with limited human resources and within limited time frames and keeping current with the technology.

Stephen is employed as an academic director and assistant professor at a university where his instructional design role is at a broader leadership level in terms of “trying to bring groups together to help lead instructional development projects....” Stephen had previously designed courses for Web-based delivery and had even witnessed the evolution to this new form of learning. In his current position, some of his responsibilities include: leading teaching and learning innovation and change; providing faculty development, consultation and technical assistance; coordinating and developing programs; writing grant proposals to seek external funding; forecasting and managing budgets; engaging in research activities; and supervising professional and administrative staff. Stephen’s greatest successes in designing for WBL thus far have been at the conceptual level, in terms of planning for large-scale projects and engaging in research activities. A major challenge faced by Stephen early in his career was learning the technology and the instructional design process, which, he says, “can’t be totally learned in the classroom.”

Katrina works as a Senior Instructional Design Specialist at the distance education unit of a university. She, too, is a relative new comer to the instructional design field who has been involved in WBL for many years. Katrina works as part of a team in the development of both online courses and external projects, which she leads. At her workplace, some members of this course development team are fixed which she feels positively impacts course development. Katrina has experienced many successes in her instructional design career such as the design and development of two Web-based courses with limited resources and within limited time frames. She finds obtaining materials from content experts and acquiring knowledge of a number of subject disciplines particularly challenging. To help

overcome these challenges, Katrina stresses the need for professional development opportunities.

John is employed as an Instructor and Instructional Design Specialist at a fisheries and marine transportation educational institution. Prior to this, John worked in a distance education unit overseeing the production of correspondence and Web-based courses and managing the course production group. John has worked in the instructional design field for ten years and has been designing for the Web for nine years. In his current job, John is involved in such areas as program development and evaluation, instructional design, faculty training, and instructing. The institution in which John works is ISO-certified, meaning constant feedback loops have been integrated into the system. John has experienced many successes and challenges in designing for WBL. Some of his successes include effectively designing for international students, working within accelerated time frames and with limited resources, and selling online assessment as a viable option. Some of the challenges faced by John include designing “flexible” learning strategies and designing for truly “flexible” learning.

Denise works as an Instructional Design Specialist in the Instructional Development Office of a university’s distance education unit. Denise has worked in this position for five years. In her previous position, Denise helped develop the university’s first Web-based course, adopting the roles of instructional designer, graphic artist and publication specialist. In her current position, Denise engages in instructional design, project management, consulting work, and provides training in the use of educational technology and other teaching-related skills and topics. To help carry out these duties, she regularly consults with

her team members, her manager and the teaching consultant in her unit. Denise is very proud of the learning experiences that she has helped develop but has found designing activities to actively engage students online and helping students and faculty feel comfortable with online assessment particularly challenging.

Chapter 5: Discussion of the Cases

Introduction

The purpose of this study was to gain insight into the experiences of five instructional designers who are designing for WBL at the post-secondary level. The aim was to identify and understand their experiences from the perspectives of their work environment, roles and responsibilities, successes and challenges, and reflections as they design these new forms of learning. To accomplish this goal, a case study approach was adopted. In the previous chapter, data collected from the five cases were presented. For each case, the experiences were organized according to the categories of work environment, roles and responsibilities, successes and challenges and the designers' reflections on their experiences. This chapter presents a synthesis of these experiences and also conducts cross-case comparisons highlighting the similarities and differences found in the designers' experiences. The chapter also considers the cases in relation to the literature reviewed in Chapter 2. The final section of this chapter presents conclusions of the synthesis and cross-case comparisons. It then discusses the implications of these findings for practice and future research.

Work Environment

Before we can fully understand and appreciate the designers' experiences, we must first gain insight into the environment in which they work. Four of the designers work at a university and one at a public college. The designers indicate that their work environment is more similar than different from that of their peers in terms of course development teams,

level of consultation and collaboration, access to resources, professional development opportunities and quality assurance initiatives.

The five designers all work as part of a team during the development of Web-based courses, which they lead. Each development team consists primarily of the instructional designer, subject matter expert and Hyper Text Markup Language (HTML) coder. Other team members are brought in as their expertise is required such as programmers, graphic artists, video producers, copyright officers, librarians, student support specialists, scientific writers and evaluators. These team members may be temporarily or permanently assigned to an instructional designer. Liu et al. (2002) had similar findings when they studied the challenges of being an instructional designer of new media development. They found that an instructional designer, above all else, needs to be a team player and a true collaborator who is able to work well with the other designers and team members. Of these team members, the designers stressed it was important to maintain good rapport with the content expert. Pan, Deets and Philips (2001) also noted the importance of this relationship, describing it as “strong and interdependent,” similar to “partners and teammates” (p. 10).

Designers of WBL not only collaborate with but also consult with, and seek advice from, these team members during the course development process. For example, they may seek the advice of the graphic artist on their team on a graphic mockup or a media specialist on whether an animation would work or how much time it would take to create. They may also collaborate and consult with many others from within their department. For example, they may ask a manager or another designer to critique a prototype. They may even consult with other designers in the field to learn from their experiences.

In relation to resources, the five designers work with many technologies and rely on the expertise of many specialists (e.g. graphic artists, video producers) during the course development process. Four of the designers have witnessed a shortage in these resources (i.e. technological, human) and would like to see more made available for course development. For example, Beth expressed concern over the lack of graphics and media resources made available in her workplace. Stephen also witnessed a lack of technological and human resources during course development which meant that he had to rely on other areas within the university and outside companies for their expertise. When these resources are not readily available in-house, four of the designers admit to performing these duties themselves (e.g. creating graphics, coding in HTML). The designers indicated that it was important for them to possess these technological skills, not just so that they could communicate more effectively with team members but also, so that they could easily mock up a Web page or graphic, provide technical support to instructors and/or conduct faculty training workshops in technologies such as WebCT™. Liu et al. (2002) also noted the importance of instructional designers of new media development possessing “hands-on experience with popular software tools” and being “proficient in a few” such as Microsoft Word™ to write design documents, Macromedia Director™ and Flash™ to create animations and HTML to ready materials for Web delivery (p. 204). Morris and Hinrichs (as cited in Conceição-Runlee & Daley, 1998) and Marti (2001) also noted that instructional designers need to possess technological skills when designing for the Web.

In relation to professional development opportunities, all five designers stressed the importance of these opportunities in allowing them to keep abreast of new technologies and

new research on WBL. These opportunities also allow them to gain technical skills and interact with their peers in the field. Again, all five designers indicated a need to stay connected with other designers especially as designing for the Web is a relatively new phenomenon. Liu et al. (2002) noted that instructional designers need to stay connected with their peers as “theirs is a career as fluid as the companies that hire them” (p. 210). They also recognized the need for instructional designers of new media development to regularly attend conferences and training sessions to stay on top of their field and keep current with the technology.

To help provide a quality learning experience for students, two of the work environments have put a quality assurance process in place. For example, John’s place of work is certified by ISO, meaning constant feedback loops have been integrated into the system. John feels that this initiative “has positively impacted the process and product because procedures are continuously being documented, followed and evaluated or audited.” Beth helped initiate a quality assurance process at her workplace. This process involves evaluating Web-based courses to determine if revisions (minor or major) are needed. It also involves the use of a standardized course development template to ensure online courses maintain a consistent look and feel. In addition, quality is assured through the use of beta testing on Web-based courses before they are offered. A measure to help ensure that quality teaching and learning are occurring online is the use of a student satisfaction survey. To also ensure quality, the college dictates that faculty receive WebCT™ training and have taught their course previously in the classroom before teaching online. Both John and Beth feel that these quality assurance initiatives positively impact the course development process and

product. The literature reviewed for this study did not address the impact of a quality assurance system on the experiences of designers of WBL.

The cases indicated that each instructional designer's work environment is more similar than different from that of their peers in terms of course development teams, level of consultation and collaboration, access to resources, professional development opportunities and quality assurance initiatives. The designers also indicated that maintaining good rapport with team members, consulting and collaborating with others, gaining access to the resources needed for development, engaging in adequate professional development opportunities, and having a quality assurance system in place positively impacts their experiences and those of the students.

Roles and Responsibilities

Consideration of the five cases also provided an opportunity to gain insight into the roles and responsibilities of designers of WBL. In all five cases, the designers assumed multiple roles and responsibilities, in addition to instructional design. These roles and responsibilities differed slightly for each instructional designer with all, to some degree, acting as instructional designers, leaders, project managers, and agents of change; engaging in research activities and committee work; writing and presenting reports; conducting faculty training workshops; and performing technical duties and providing technical support. Some of the designers were also involved in curriculum and program development; program and course evaluations; instructing; supervising; consulting; and writing proposals. Liu et al. (2002) also found that instructional designers perform multiple roles depending on a

project's needs such as: project management; reviewing others' work; finding clients; writing scripts and technical documents; programming code; creating animations/graphics; and training others. When they studied how instructional designers spend their time, Cox and Osguthorpe (2003) found they spend a great deal of time in original design and development work and managing projects with teaching-training, marketing, and consulting taking up a small portion of their time.

Because of these multiple roles and responsibilities, the designers are regularly required to multi-task with a typical workday for the designers involving performing instructional design duties and communicating with team members via e-mail, phone or in person to monitor how a task or project is progressing. The designers also spent a great deal of time conducting faculty training sessions and attending meetings. In a study on the role(s) and responsibilities of instructional designers of new media development, Liu et al. (2002) also found instructional designers are heavily involved in the course development phases of planning and designing with their major responsibilities involving working with clients, subject matter experts, and team members, and designing. In a similar study on how instructional designers spend their time, Cox and Osguthorpe (2003) found that 23% of their time is spent in original design work, 22% in project management or administrative responsibilities, 14% in meetings, and 12% conducting research. The authors concluded that "those who call themselves designers spend most of their time doing original design and development work and managing projects" (p. 47).

As designers of WBL at the post-secondary level, the individuals work with content experts in readying their courses for online delivery. This role is more of a guidance one,

whereby the instructional designers advise and instruct faculty on how to best organize and deliver their course materials online. Once the courses are developed, the designers then guide or advise instructors on how to best teach or facilitate online using the latest Web-based technologies. Pan, Deets and Philips (2001) also recognized the important role of instructional designers in reading content for online delivery. The authors argued that “without the technical and pedagogical knowledge from the instructional designer, a course with good content (from the instructor) will not succeed” (p. 11). DiCorpo (2001) had similar findings, that faculty who did not receive instructional design support encountered difficulty transforming their approach to teaching and learning to the online environment. They also did not receive information on how to increase communication and collaboration with their students online. Because of a lack of instructional design support, faculty members had little time for reflection on student learning as a great deal of their time was devoted to crisis management. In contrast, “the academics who received intensive and collaborative instructional design support not only maintained their focus on support for students, they expanded their conceptions of what this means and implemented designs that provided enhanced support” (Ibid., ¶ 54).

To effectively carry out these roles and responsibilities, the participants noted it was important for them to be well versed in instructional design theories and processes, adult learning principles, learning theories, online teaching and learning practices and Web-based technologies. This knowledge would not only allow them to more effectively design learning experiences for the Web but would also allow them to communicate this knowledge to others including administrators and team members, particularly content experts and instructors.

Thus, designers of WBL are looked upon as leaders in both acquiring this knowledge and disseminating it. This knowledge is continuously being built on, particularly due to the advent of new technologies and new research into instructional design, adult learning and online teaching and learning practices. Thus, the designers must keep abreast of new Web-based technologies and new research into WBL and lead their development unit in the adoption of new technologies, policies and processes based on this new knowledge. In other words, they act as advocates and agents of change who fuel the adoption of newer technologies or ways of approaching things, says John. Liu et al. (2002) also recognized the need for instructional designers to learn new tools and keep up with technological advances when designing new media materials.

As part of their instructional design role, the participants may perform some or all of the instructional design steps depending on the course, program or project. For example, Denise and Katrina often perform all steps (conducting a needs analysis, writing learning objectives, gathering resources, designing learning experiences and evaluating these learning experiences) when working on external projects but may only design the learning experiences when developing online courses. Parhar and Mishra (2000) also noted that it is important for designers of WBL to be able to perform all steps of the instructional design process effectively, namely identifying target learners, conducting a needs analysis, stating objectives, designing instructional material, developing performance measures and judging their validity and reliability.

Not only do the participants play an important role in readying course materials for Web-based delivery but they also play an important role in monitoring the course

development process to ensure all course components are completed on time and as required. As both roles are often adopted by the designers as a course is being developed, it is often difficult for them to distinguish between the two. For example, Beth describes her instructional design role as more of a monitoring one, ensuring that a project stays on task and that all pieces are effectively completed by the designated due dates. John terms this role 'project lead' as he believes it is only when one exercises total control over a project's resources (human and financial) that the role can be designated "project manager." He is often frustrated when his team members refer to his role as project manager and not that of project lead, believing him to have control over the project's resources when in actual fact he does not. Stephen agrees, stating there to be two levels of project management in course development: one carried out by the instructional designer and the other by the actual project manager.

In their study on the role(s) and responsibilities of instructional designers of new media development, Liu et al. (2002) found that half of the instructional designers were also project managers. Cox and Osguthorpe (2003) reported similar findings, that those in the instructional design profession spend 23% of their time in original design work, 22% of their time performing project management duties and 14% in meetings. The authors noted that if the categories of project management and meetings were combined, then instructional designers would be spending slightly more time in management-related work than in original design work.

As part of their responsibilities, all five designers engage in research activities and committee work to some degree. For example, because they are well versed in Web-based

technologies, they may be asked to sit on a committee whose goal is to implement a new learning management system such as WebCT™. Because they are knowledgeable of best online teaching practices, the designers may be asked to sit on a committee responsible for compiling a guide to facilitating online for new Web-based instructors. And because they are involved in the design of WBL, the designers may be called on to sit on a committee and draft an online exam policy, which was the case for Katrina. Both Liu et al. (2002) and Cox and Osguthorpe (2003) noted that instructional designers spend a great deal of their time in meetings but whether these meetings involve committee work is unknown. Part of the instructional designers' committee involvement may include conducting research, as was the case for Katrina. As online exams were a new type of assessment being implemented by her unit, Katrina had to research the topic before an online exam policy could be drafted. Also, if one is implementing a new learning management system, then research is needed on all systems reviewed to determine cost, technological requirements, communication tools, level of customer support provided, and user satisfaction. In their study, Cox and Osguthorpe (2003) found that instructional designers spend 12% of their time engaging in research activities.

Because the five designers are responsible for keeping up-to-date on new Web-based technologies and online teaching and learning practices, when they acquire new knowledge either through research, workshops or conferences, they often have to share this knowledge with others particularly management, team members, colleagues and peers in the field. This process/sharing often involves the writing and presenting of formal reports. When they studied the roles and responsibilities of instructional designers of new media materials, Liu

et al. (2002) also found that designers spend a great deal of time writing technical documents. Because the five designers are responsible for disseminating new information to content experts and instructors, particularly information on Web-based technologies and online teaching practices, all five designers regularly hold faculty development workshops where this knowledge is shared. Cox and Osguthorpe (2003) found that instructional designers spend only a small portion of their time in the role of stand-up trainer although they expressed concern over instructional designers spending too much time in this role.

Not only are the five designers responsible for keeping abreast of, and delivering workshops on, new Web-based technologies but they also perform technical duties and provide technical support as part of their role. For example, four of the designers stressed the importance of possessing such technical skills as being able to create a graphic and code in HTML which allows them to quickly mock up a graphic or Web page. Liu et al. (2002) also found that “knowledge of these kinds of tools can help [instructional designers] quickly put together a prototype to demonstrate design ideas to the client” (p. 204). Parhar and Mishra (2000) had similar findings when they conducted a study to determine the competencies required of instructional designers of Web-based instruction. They found that these individuals should be proficient in a variety of software packages and be able to type and format pages, create Web sites, utilize Web-based course management tools and analyze emerging technologies. Because they are seen as being knowledgeable of these Web-based technologies, they are often called upon for support by their team members, particularly content experts and instructors.

In addition to the aforementioned roles and responsibilities, some of the designers also engage in program and curriculum development; program and course evaluations; instructing; supervising; consulting; and writing proposals. For example, John engages in program development which he describes as being on a much larger scale than with course development in that “you start looking at the particular areas of interest or importance within the program and out of that come courses and then from there, you start doing the curriculum development for the courses.” This program mindset helps ensure that “every course in the program is consistent” and “the theme of the program is maintained.” John also performs program evaluations which involve assessing whether programs (and sometimes courses) “are achieving what they’re supposed to be achieving,” determining “what needs to be changed in order to keep it up to date [if] it is out of date,” analyzing feedback from instructors and students, determining “what they are saying about the courses, what works, what doesn’t work” and then making changes to the program accordingly. John really enjoys these aspects of his job believing both to be beneficial to students.

John and Stephen also teach online in their areas of expertise. This experience allows them to gain the perspective of an online facilitator which, according to John, allows him to develop more effectively. In this role, he quickly realized that a lot of theory did not work in practice. Many of the designers also supervise the work of others as part of their job. These may be publication specialists, as is the case for Katrina, or other designers, as is the case for Beth. They may also act as consultants as part of their role. For example, Stephen often consults with provincial and federal government departments in the areas of e-learning, distance learning, continuing professional health education and interprofessional education.

Denise may also be called on to act as a consultant on teaching practices and program and course design. Some of the instructional designers may also be required to write proposals to obtain external projects, as is the case with Stephen and Beth. Liu et al. (2002) also noted that instructional designers of new media development review each other's work and obtain clients while Cox and Osguthorpe (2003) noted that they teach, consult, market and perform evaluations as part of their role.

To effectively carry out these multiple roles and responsibilities and/or ensure a course or project is ready by its due date, four of the designers work outside of regular hours during the evenings and weekends. The designers are, in turn, provided a flex time option to compensate for these extra hours worked. Liu et al. (2002) also found that, when working on a project and facing a deadline, instructional designers typically work long hours, as much as 60 per week. All of the participants may also choose to bring work home especially if in the instructional design phase because there are fewer interruptions in this environment. As the roles and responsibilities vary for every designer in every institution, it is often difficult for other designers to pick up their workload when they are off sick or on vacation. Thus, the designers have to catch up on work when they return or schedule their leave around peak development times.

The cases indicated that designers of WBL perform multiple roles and responsibilities, in addition to instructional design. These roles and responsibilities differ for each designer in each institution, require a wealth of knowledge and skills, and often involve designers working extra hours to complete. As Cox and Osguthorpe (2003) noted, it is beneficial to determine how instructional designers spend their time but it would be even

more beneficial to ask them if they felt that their time was well-spent and if given the choice, how they would decide to spend their time.

Successes and Challenges

The five cases provided an opportunity to identify some of the successes experienced by designers of WBL. The majority of these successes involved the design and development of a learning experience, within the allocated time frame and budget, which received positive feedback. Three of the participants attributed their product's success not only to their instructional design role, but to their project management role as well. Other successes experienced by the instructional designers include forming favourable relationships with faculty, clients and other team members; engaging in international consulting; planning for large-scale WBL projects; engaging in research activities; and designing for international students. In a study on the roles and responsibilities of instructional designers of new media development, Liu et al. (2002) also found that designers express job satisfaction from working with clients, developing products, and being creative. The designers also enjoyed learning new tools and keeping up with technological changes.

The cases also provided an opportunity to identify challenges faced by designers of WBL. Two such challenges faced by three of the designers include designing and developing within accelerated time frames and with limited resources (human, technical, financial). This may mean producing a product of lower quality than if the development cycle were longer and the resources more abundant. None of the literature reviewed for this study cited

designing and developing within accelerated time frames and with limited resources as being challenging for instructional designers.

Three of the designers found working with difficult team members (e.g. content experts) particularly challenging, especially those who do not produce on time or as required. The designers indicated that maintaining a positive rapport with team members while ensuring their tasks are efficiently and effectively completed as an important role of the project manager or project lead. Pan, Deets and Phillips (2001) noted the subtle relationship between a designer and the faculty member or content expert as being a challenge for instructional designers. The authors found instructional designers “exert an influence on faculty by giving constructive advice” and act as leaders who offer suggestions and guidance, but who also are adaptive and willing to show support in maintaining the delicate relationship (p. 11). Liu et al. (2002) also noted this delicate relationship as being a challenge for instructional designers. To overcome this challenge, they suggested instructional designers aim to receive feedback throughout the design process, ask questions, explain industry jargon, guide clients in making better choices, and inform clients when choices will impact production.

Keeping current with technology is also a challenge faced by three of the designers. Because WBL is an area where new technologies are continuously being implemented, it is important for instructional designers to keep abreast of these technologies so that they may work with them and/or instruct others in their use. Liu et al. (2002) also found adapting to technological changes a major challenge facing instructional designers. They noted that “rapid technological advances continuously bring changes and new requirements to the field

of instructional design” and to be effective, instructional designers “must stay very flexible to adapt to changes quickly and continuously gain new skills to be competitive” (p. 208). To keep up-to-date on these new technologies, the authors recommend that instructional designers take additional college classes, attend conferences and training, share experiences with their colleagues, study products from competitors, maintain university connections and involvement, and learn from clients.

As designers of WBL are often required to develop courses in a number of subject disciplines, the participants may find it challenging to acquire enough knowledge of a discipline to write learning objectives and design activities. Such was a challenge for two of the designers. Liu et al. (2002) also recognized that instructional designers must understand the subject matter of the materials to develop although the designers studied did not list this as a challenge. Two of the five designers found “selling online assessment as a viable option” a challenge. These designers question why exams for online courses are still invigilated and have experienced considerable success in designing courses where assessment occurs totally online. They argue that there is a lack of faith amongst faculty and students for this type of assessment and often find it challenging to come up with assignments and online exams that evaluate WBL. None of the literature reviewed for this study cited developing online assessment instruments and convincing faculty and students of their merits as challenging.

While many of the challenges faced by the five designers were similar, others were different. Some of these additional challenges include: being assigned too many courses to develop; learning the instructional design process; performing project management duties or not doing so; selling hybrid courses; designing “flexible” learning strategies; designing

for truly “flexible” learning; and incorporating “real-time” activities into online courses. None of the literature reviewed for this study cited the above as being challenging for instructional designers.

Reflections

Consideration of the cases also provided an opportunity for the designers to reflect on their experiences: Do they enjoy designing for the Web? How has their role changed with the transition to WBL? What qualities and skills do they feel someone in their position needs to possess? How do they feel their education and prior experiences have prepared them for this position? What would they change about their experiences to make them more positive? These reflections help provide further insight into the experiences of designers of WBL.

All five designers described enjoying designing for WBL and all take great pride in the learning experiences which they helped develop. Even though they find the job stressful at times, they describe their experiences as being ‘overwhelmingly’ positive, challenging, educational, interesting and fun. They particularly enjoy the social aspect of their job where they get to work with many different people on a daily basis. According to Stephen, many of these team members emerged with the move to WBL (e.g., HTML coders, programmers, animators).

Not only did the evolution to WBL bring more members to the course development team, but it also brought with it more technologies to develop with, more steps in the development process (e.g., product testing), more time needed to develop, and more roles and responsibilities for the designer of WBL. As Katrina notes, there has not only been an

evolution to WBL but also an evolution in the design and development of WBL and how the product looks online. For example, instead of putting only text on the Web, designers are availing of some of the multimedia technologies and communication tools to illustrate concepts and ideas and actively engage the learner. Beth stresses that her experiences as an designer of WBL are always changing due to the emergence of new technologies. John feels it is the role of the instructional designer to “fuel the adoption of [these] newer technologies or ways of approaching things” and once the new technology or process is implemented, pass the responsibility on to another team member.

Not only is an effective instructional designer one who leads the course development team in adopting new technologies, but as noted in all five cases, he or she is also, above all, creative and a team player. All five cases describe a designer of WBL as one who is flexible, adaptable, practical and innovative, able to change. In terms of personal skills, the designer needs to be enthusiastic, dedicated, motivated, personable, social, tactful and confident. The designer should be an analytical thinker who is able to multitask, plan, work in challenging environments and be willing to learn. He or she should also possess excellent organizational, communication, technological and team management skills, and an adult learning background.

Liu et al. (2002) identified similar characteristics in their study of the skills required of instructional designers in new media development. They found that instructional designers need to be flexible, able to adapt to changes quickly and continuously gain new skills. The authors also found that a good designer is a team player, one who is attentive to details, a good communicator and one who has experience, is self-reliant and a resourceful problem-

solver. Liu et al. also identified the following four essential competencies required of instructional designers of new media development: communication skills, instructional design skills, problem solving/decision making skills and knowledge of technology. In a similar study on the competencies required of instructional designers of WBL, Parhar and Mishra (2000) noted the importance of being able to demonstrate skills in organization, time management, problem solving and research; being able to communicate effectively in visual, oral and written form; and being able to establish good rapport with individuals and groups.

The cases also provided an opportunity to consider the design of WBL from the perspective of art and science. Two of the designers described the design of WBL as more of an art while the other three described it as a combination of both. All five participants recognized that effective designers of WBL possess certain qualities, many of which are innate. John ranks these qualities higher than their educational counterparts stating that anybody can learn the science of instructional design. All five individuals also recognize that effective designers of WBL possess certain skills, that “can’t be totally learned in the classroom” but that are acquired on the job. From their research into the role of instructional designers of new media development, Liu et al. (2002) also recognized the importance of instructional designers “learning by doing,” “providing experience,” and “learning from mistakes” (p. 204).

Even though all participants described many successful experiences in designing for WBL, they described many challenging ones as well. Thus, consideration of the cases also provided an opportunity to gain insight into how to alleviate some of these challenging or negative experiences. When asked what they would have changed about their experiences

to make them more positive, three of the participants responded they would have communicated more with others in the field to share their experiences with, and learn from, one another. The designers would have also engaged in more professional development opportunities, made better design decisions, worked in industry, taught online and made others aware of their many and varied roles and responsibilities. Overall, the designers experienced numerous successes in designing for WBL, many of which were attributed to their vast learning experiences and to institutional and management support.

Conclusions

The purpose of this study was to gain insight into the experiences of designers of WBL at the post-secondary level. To accomplish this goal, the cases of five designers of WBL in two urban centres of Newfoundland and Labrador, Canada were considered from the perspective of their work environment, roles and responsibilities, successes and challenges and reflections on their experiences. The previous chapter presented a report for each case. This chapter presented a synthesis of the experiences of the five designers. It then compared their experiences with each other and with those discussed in the literature in Chapter 2. From this synthesis and comparison, a composite view emerged of the experiences of the designer of WBL at the post-secondary level. This composite view is mindful of the limitations of the study and is presented, not with the aim of generalizing, but with the aim of providing insight into the experiences of designers of WBL at the post-secondary level. A different composite might have emerged had a different set of cases been considered.

When the five cases were considered, the composite view that emerged was one of the designer of WBL as a team player and collaborator; project manager, leader, and supervisor; agent of change; specialist and expert; researcher; trainer, instructor, and consultant; course, curriculum, and program developer, and course and program evaluator. Each of these characteristics of the designer of WBL is elaborated on in the following paragraphs.

As a team player and collaborator in a Web-based environment, designers work with many others during the course development and delivery process including content experts, instructors, and Hyper Text Markup Language (HTML) coders. Many other specialists are brought in as part of the course development team as their expertise is required including programmers, graphic artists, video producers, copyright officers, librarians, student support specialists, scientific writers and evaluators. As part of this course development team, it is important for designers to maintain good rapport with all team members specifically content experts. To be successful in this role, they may also need to possess good communication and interpersonal skills and be enthusiastic, dedicated, motivated, personable, and social when interacting with other team members. It is also important that designers of WBL be able to work in these challenging environments, where they are willing to consult with, and seek advice from, other team members on a regular basis in their area(s) of expertise. Designers of WBL should also be willing to consult and collaborate with others in their workplace and their peers in the field.

Designers of WBL are also leaders and managers of this course development team. In this role, they ensure course components are effectively and efficiently completed by the

various team members. This may also involve supervising the work of others such as publication specialists or other designers. This management role can be somewhat challenging for designers, particularly when team members do not produce on time or as required or if resources (human and financial) are limited. To successfully carry out these project management duties, designers of WBL need to be well organized and possess excellent communication and team management skills. They must also be able to plan and adjust those plans as needed. In their interactions with content experts, designers must also act as leaders in guiding faculty through the course development process, advising them on how best to organize and develop their course materials for online delivery. In this leadership role, designers of WBL need to appear knowledgeable of their field and exercise tact and confidence in their interactions with team members, particularly content experts.

Designers of WBL are also leaders in promoting the adoption of Web-based technologies, policies and processes by their course development units. In this role, they act as advocates or agents of change. For example, they may help initiate a course development quality assurance process or help put in place an online exams policy.

Designers of WBL are also specialists and experts who are knowledgeable of the technologies used to develop WBL, possess skills in the use of some of these technologies, and possess the expertise required to effectively design Web-based instructional materials and learning activities. As Katrina noted, designing for WBL is more than merely placing text online, it also involves looking at different ways of representing text visually such as through the use of video, audio, animations or graphics. Thus, designers of WBL need to be knowledgeable of the technologies used to develop multimedia components. Possessing such

knowledge will allow them to more easily communicate with the specialists who use these technologies and more easily storyboard multimedia pieces for development. Designers of WBL may also need to possess HTML coding skills so that they can easily mock up a Web page for clients to view. They may also need to be knowledgeable of the learning management system (e.g. WebCT™) used to design and deliver Web-based courses for their use and to provide support to other members of the course development team. Possession of these technical skills (graphics design, HTML coding) will also allow designers to perform these technical duties if human resources are low or to meet a deadline. To effectively develop for WBL, designers may also need to be knowledgeable in instructional design processes, learning theories, adult learning principles, and online teaching and learning practices. Thus, designers of WBL will need to be willing, and able to learn, regularly engaging in professional development opportunities (e.g. workshops, conferences, communications with other designers) to keep abreast of new knowledge.

As experts, designers of WBL multi-task and often work outside of regular hours. They may also choose to work at home, when reading or editing, due to less interruptions in this environment. A typical day for the designer of WBL involves performing instructional design duties and communicating with team members to monitor how a task or project is progressing. Because they are specialists in what they do and because their assignments differ, it is often difficult for a designer to step in and perform the duties of another. Thus, designers of WBL will need to be able to work in this type of demanding environment and be able to multi-task, cope with stress, be well organized, and possess excellent time management skills.

Designers of WBL are also researchers whereby they seek new knowledge on Web-based technologies and online teaching and learning practices. For example, they may research learning management systems if part of a purchasing committee or online assessment if an instructor wishes to include this new form of assessment in his or her Web-based course. When new knowledge is acquired, designers of WBL may be called on to write and present reports or sit on committees where this information is shared. To successfully engage in research activities and report results, designers of WBL need to possess excellent research and verbal and written communication skills.

Designers of WBL are also trainers, instructors, and consultants in sharing their knowledge with others. For example, they may conduct workshops or one-on-one sessions with faculty on Web-based technologies (e.g., HTML coding, WebCT™) and online teaching practices. They may also give presentations to their colleagues on new Web-based technologies and current projects. Designers of WBL may also be asked to instruct online or in the classroom in their field of expertise. They may also act as consultants in such areas as e-learning, course or program development, and online teaching and learning practices. To successfully carry out these roles, designers of WBL need to be knowledgeable of the content presented and of teaching practices, and possess excellent verbal and written communication skills.

Designers of WBL at the post-secondary level are also course developers. This role may involve performing such instructional design duties as conducting a learner needs analysis, writing learning objectives, gathering resources, designing learning experiences and evaluating these learning experiences. It also involves designing with the adult learner in

mind. Activities should actively engage the learner with content presented using various forms of multimedia. To effectively develop for WBL, designers may need to be innovative and creative in their designs and possess an analytical and systems approach to thinking. They may also need to possess knowledge of Web-based technologies, instructional design processes, learning theories, adult learning principles, and online teaching and learning practices.

Designers of WBL may also be curriculum and program developers whereby they design programs and curriculums for these programs and for courses within these programs. Developing at the program level helps insure courses in a program are consistent and the program theme is maintained. Designers of WBL may also be program and course evaluators whereby they determine if the programs and/or courses are achieving what they are supposed to be achieving. To successfully carry out these roles, designers may need to be knowledgeable of program and curriculum design and program and course evaluation methods.

Implications for Practice

Designers of WBL wear many hats and need to possess many qualities and skills to effectively carry out their day-today duties. They are team players and collaborators; project managers, leaders, and supervisors; agents of change; specialists and experts; researchers; trainers, instructors, and consultants; course, curriculum, and program developers; and course and program evaluators. Some of these roles and responsibilities have emerged with the transition to WBL, as have some of the team members and technologies used to develop

materials for online delivery. These multiple roles and responsibilities, team members and technologies have implications for practice.

It is important for managers and employers to recognize the many and varied roles and responsibilities that designers of WBL undertake and to support them in these roles. It is also important for managers and employers to provide their designers with adequate professional development opportunities so that they may successfully carry out these roles and responsibilities. Likewise, institutions that train designers of WBL might focus programs on the qualities, skills and knowledge required to effectively perform these roles and responsibilities.

Given that designers of WBL work as part of a team in the course development process, both pre-service and in-service training might focus on building designers' skills in collaboration, consultation, communication, and interpersonal interactions. Given that these individuals find their relationships with content experts particularly challenging, training might be geared towards teaching designers ways of maintaining positive rapport with content experts while also getting them to produce on time and as required.

Given that designers of WBL lead their course development teams, both pre-service and in-service training might focus on building project management, team management, time management, resource management, organizational and communication skills. Training might also focus on teaching designers how to effectively deal with difficult team members, getting them to produce on time and as required. It is also important for employers to support designers in this role, providing adequate resources for development and having processes in place for dealing with delinquent team members.

Because designers of WBL are specialists and experts in the development of online instructional materials, both pre-service and in-service training might focus instructional design practices, adult learning principles, learning theories, and online teaching and learning practices. Training might also focus on strengthening their innovative and creativity skills while building their analytical and systems' thought processes. Given that designers of WBL work with many technologies and specialists who use these technologies during the development process, training might focus on building designers' technical skills. Possession of these skills will allow designers to communicate more effectively with other team members and step in when resources are limited. Because designers of WBL are experts who often put in extra hours and work at home due to less interruptions, it is important for employers to offer their designers flexibility in their work schedule and environment. Pre-service and in-service training might also focus on strengthening their time management and concentration skills.

Since designers of WBL may conduct research, perform committee work, and write and present reports, pre-service and in-service training might focus on building their research and verbal and written communication skills. Because designers of WBL may also be trainers, instructors, and consultants, pre-service and in-service training might also focus on building their verbal and written communication skills along with educating them in teaching practices.

Given that designers of WBL are course developers, pre-service and in-service training might focus on educating them in instructional design processes, adult learning principles, learning theories, online teaching and learning practices, and Web-based

technologies. Training might also focus on strengthening their innovative and creativity skills while also building their analytical and systems' thought processes. Since designers of WBL may also be curriculum and program developers and program and course evaluators, some instruction in these areas may be necessary. Due to the multiplicity of roles and responsibilities assigned to designers of WBL, these individuals may need extra levels of support from their employers including technical, management and institutional support and recognition and/or compensation. Managers may also need to be cognizant of the many roles and responsibilities assigned so as not to overload their designers. Given that much knowledge and skills are required of designers of WBL, these individuals need to be provided with adequate professional development opportunities to keep abreast of new knowledge and to acquire new skills.

Implications for Research

Given that designing for WBL is an emerging profession, further research might focus on the knowledge, qualities and skills required of designers developing for this new form of learning. Designers of WBL may be assigned multiple roles and responsibilities. Therefore, research might focus on determining which roles need to be carried out by instructional designers and which can be performed by other individuals. As Cox and Osguthorpe (2003) note, it is beneficial to determine how instructional designers spend their time but it would be even more beneficial to ask them if they felt that their time was well-spent and if given the choice, how would they decide to spend their time.

As designers of WBL may also act as project managers or team leaders, further research might focus on the benefits of the project manager versus team leader role. As designers of WBL may also be Web-based instructors, research might focus on these individuals' experiences to determine how their instructor role impacts their instructional design experiences and vice versa.

In order to effectively perform the numerous roles and responsibilities assigned, designers of WBL may need training in these specialized areas. Further research may focus on how we can best train (pre-service and in-service) designers of WBL and how present forms of training compare with the actual needs of a designer of WBL.

Whereas the data collection method for this study consisted of a questionnaire and two interviews, a study which observes its participants in practice would provide further insight into the experiences of instructional designers. This approach might provide more in-depth and an alternate perspective on the experiences of designers of WBL at the post-secondary level.

Summary

The purpose of this study was to gain insight into the experiences of five instructional designers who are designing for WBL at the post-secondary level. The aim was to identify and understand their experiences from the perspective of their work environment, roles and responsibilities, successes and challenges, and reflections as they design these new forms of learning. To accomplish this goal, a case study approach was adopted. In the previous chapter, the five cases were presented. This chapter presented a synthesis of these

experiences and conducted cross-case comparisons, comparing each of the cases with each other and with those discussed in the literature in Chapter 2. The final section of this chapter presented conclusions of the synthesis and cross-case comparisons and discussed the implications of these findings for practice and research.

The cases indicated that each designer's work environment is more similar than different from that of their peers in terms of course development teams, level of consultation and collaboration, access to resources, professional development opportunities and quality assurance initiatives. The designers indicated that maintaining good rapport with team members, consulting and collaborating with others, gaining access to the resources needed for development, engaging in adequate professional development opportunities, and having a quality assurance system in place positively impacts their experiences and those of the students.

The cases also indicated that designers of WBL perform multiple roles and responsibilities, in addition to instructional design. These additional roles and responsibilities may include project management, research activities, committee work, writing and presenting reports, conducting faculty training, performing technical duties and providing technical support.. These roles and responsibilities require specialized knowledge and skills, and often involve designers working extra hours to complete.

The majority of successes experienced by the designers involved the design and development of a learning experience within the allocated time frame and budget which received positive feedback. Designing and developing within accelerated time frames and with limited resources was also cited as a challenge for the designers as was working with

difficult team members, keeping current with the technology, acquiring knowledge of a number of subject disciplines, and selling online assessment.

When asked what they would have changed about their experiences to make them more positive, the designers responded they would have communicated more with others in the field. They would have also engaged in more professional development opportunities, made better design decisions, worked in industry, taught online and made others aware of their many and varied roles and responsibilities.

Through the synthesis and cross-case comparisons emerged a composite of the designer of WBL. These individuals are team players and collaborators; project managers, leaders, and supervisors; agents of change; specialists and experts; researchers; trainers, instructors, and consultants; course, curriculum, and program developers; and course and program evaluators. It is important for managers and employers to recognize the many and varied roles and responsibilities that designers of WBL undertake and to support them in these roles. It is also important for managers and employers to provide their designers with adequate professional development opportunities so that they may successfully carry out these roles and responsibilities. Likewise, institutions that train designers of WBL might focus programs on the qualities, skills and knowledge required to effectively perform these roles and responsibilities. Further research might focus on the knowledge, qualities and skills required of designers of WBL. It might also focus on determining which roles need to be carried out by instructional designers and which can be performed by other individuals. It might also focus on the benefits of the project manager versus team leader role and on how the instructor role impacts a designer's experiences and vice versa. Further research may

focus on how we can best train (pre-service and in-service) designers of WBL and how present forms of training compare with the actual needs of a designer of WBL. It would also be beneficial to observe designers of WBL in practice. Such insight might provide more in-depth and an alternate perspective on the experiences of designers of WBL at the post-secondary level.

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Appendix A: Participant Consent Form

February 2nd, 2004

Dear Study Participant:

I am contacting you to invite you to volunteer to participate in an opportunity to provide insight into your experiences as an instructional designer. You were chosen because I believe that your combination of experience and the context in which you work is significant and interesting.

This opportunity will take place as part of my Masters program in Education (Information Technology). I am completing a thesis on the experiences of five instructional designers at the post-secondary level as they design for Web-based learning. The aim of the study is to identify and understand their successes, challenges, roles and responsibilities as they design these new forms of learning. This information will be useful in understanding the profession as it is now and will ultimately provide insights that will improve Web-based learning in general. Your participation is vital to the success of this project as your experiences as an instructional designer will help policy makers and educators better understand the contexts, constraints and conditions in which instructional designers work. The results of the research will be made available to you. You will also receive a hard-bound copy of the thesis upon its completion.

The study will span the months of February and March, 2004 and will require approximately 135 minutes of your time. The data collection process will consist of three phases, each of which and the time required of each participant are outlined in the table following. The data collected during each phase will be compiled into a case record. This record will then be used to write a case report describing the experiences of each instructional designer studied. Participants will be provided with a copy of their case report and may choose to delete and/or reword information before it is included in the study.

Date Collection Phase	Description	Time Required
Phase I	Questionnaire	30 minutes
Phase II	Interview	60 minutes
Phase III (as needed)	Interview	Depends

The proposal for this research has been approved by the Interdisciplinary Committee on Ethics in Human Research at Memorial University of Newfoundland. No deception is involved. Participation is **not required** and refusal to participate will contain no penalty. If

Appendix B: Questionnaire

Research Study Questionnaire The Experiences of Instructional designers of Web-Based Learning at the Post-Secondary Level

Name _____

Institution _____

Position _____

Instructions: Please complete the following and return as an attachment via E-mail to tpowell@mun.ca. If any questions do not apply, please leave blank. You may choose not to reply to some questions.

Background Information

1. How long have you worked in your current position?
2. What was your previous position title?
3. How long have you been designing for Web-based learning?
4. How long have you worked in the Instructional Design field?
5. What is your current education level?

Roles and Responsibilities

6. What are your main responsibilities?
7. What duties, if any other than instructional design, do you perform as part of your job (e.g., project management, programming/coding, copyediting, graphics design, etc.)?

Work Schedule

8. What is your current work schedule? Check (X) all that apply.

- ☐ Set work hours (e.g. 9 a.m. - 5 p.m.)
- ☐ Flexible work hours
- ☐ Works away from the office (e.g., at home, while attending conferences)
- ☐ Works overtime

Work Environment

9. Do you work as part of a team? If yes, what members normally make up your team?

10. How many instructional designers are employed at your institution?

Access to Resources

11. Do you consult others (e.g., other designers, management) in the course design/development process?

12. Do you attend professional development training, conferences, etc.? If so, how often?

13. Is needed technology readily available if needed in the course development process?

Successes and Challenges

14. What have been some of your successes in designing for Web-based learning?

15. What have been some of your challenges in designing for Web-based learning?

Thank you!

Appendix C: Sample Phase II Interview Questions

Phase II Sample Interview Questions

Note: The interview questions will be derived in relation to the study's purpose but also in relation to the results of the answers of the questions on the questionnaire. The questions listed below may or may not represent those asked in the interview.

1. In the questionnaire, when asked about your major responsibilities, you stated that "(to be inserted after questionnaire data are compiled)". Would you like to elaborate on these responsibilities?
2. Describe your role as an instructional designer in the course development process?
3. In the questionnaire, when asked about some of the duties other than instructional design that you perform as part of your job you stated "(to be inserted after questionnaire data are compiled)". Would you like to explain what these duties entail?
4. Describe a typical day for you on the job.
5. In the questionnaire, you stated that needed technology is not available in the course development process. Please provide examples. How do you feel this impacts on your experiences?
6. In the questionnaire, when asked about your successes in designing for Web-based learning, you stated that (to be inserted after questionnaire data are compiled). Can you tell me a little more about your successes?
7. In the questionnaire, when asked about your challenges in designing for Web-based learning, you stated that (to be inserted after questionnaire data are compiled). Can you tell me a little more about these challenges and how you overcame them if indeed you did?
8. How would you describe your experiences as an instructional designer? What adjectives would you use?
9. Have your experiences changed or have they remained the same?
10. If you could change something about your experiences as an instructional designer, what would it be?



